

Cold Weather Camping

Stay Warm, Stay Dry and Stay Alive.

Clothing

1. Cotton is Rotten
 - a. Cotton clothing is the absolute worst choice for winter weather wear it holds moisture, wicks heat away from the body when wet, and provides very little insulation when dry.
 - i. Cotton includes the following
 1. Jeans
 2. Flannel Shirts
 3. Most t-shirts
 4. Most sweatshirts
 - b. The best materials to use when cold weather camping are either synthetic or wool.
 - i. Polyester
 - ii. Rayon
 - iii. Spandex
 - iv. Gortex
 - v. Wool
 - vi. Any blend of the above just NO COTTON
 - c. Cotton clothing was actually referred to as "Death Cloth" during the Revolutionary and Civil Wars.
2. Layers
 - a. Wearing layers of NON COTTON clothing can help insulate you against the elements and will prevent you from overheating as you work and play at camp.
 - b. Building a layering system starting close to the body
 - i. Synthetic underwear and t-shirt (yes you can get synthetic underwear for men, don't worry no one will see it its underwear)
 1. Under Armor
 2. Poly blend shirts
 - ii. Long sleeve synthetic or wool long underwear shirt and pants.
 - iii. Synthetic or wool pants and shirt
 - iv. Outer Shell
 1. Coat with layers and a "hardshell"
 - a. Something that snow and moisture beads off.
 2. Hat
 - a. Crucial to survival, 30%+ of your body heat is lost from your head
 - b. Wool or synthetic
 3. Scarf
 4. Mittens
 - a. Two Layers
 - i. Thin glove liner
 - ii. Mittens over top
 5. Pants
 - a. wind pants, hardshell.
 - v. Footwear
 1. Sock Liner
 2. Wool Socks
 3. Insulated and waterproof Boots or Mukluks
 - a. If you can wear them in the summer they are not appropriate for temperatures under 40 degrees.

Shelter and Sleeping

1. Layers, if its good for your body its good for your shelter
 - a. From the Ground up
 - i. Tarp or heavy plastic sheeting
 1. Covers the entire bottom of the tent
 2. DOES NOT stick out from under the tent
 - a. Water on that tarp will actually migrate under the tent if flaps are left out.
 - ii. Tent
 1. The smaller the better
 - a. Several small tents are better then the cavernous family tents that are more suited for warmer weather.
 2. Ventilate
 - a. Human exhalation is 60% moisture
 - b. Proper ventilation will eliminate condensation from freezing on the inside of your tent.
 3. WATERPROOF IT
 - a. A little time and expense on waterproofing and seam sealing will save lots of problems in the end.
 4. Know how to set it up
 - iii. Inside the tent.
 1. Ground pad or mattress
 - a. Besides providing some extra comfort nothing will provide better insulation against the ground.
 - b. Avoid cots
 - i. Airflow under the cot will chill the sleeper.
 2. Wool or synthetic blanket for the bottom of the tent optional.
 3. Sleeping System
 - a. Good
 - i. Layers of Wool or synthetic blankets made into a bag type (thing swaddle)
 - ii. Sleep in your clothing excluding your outer shell.
 - b. Better
 - i. Non-synthetic sleeping bag rated between 30-40 degrees with blankets and wearing layers of clothing inside the bad
 - ii. Synthetic mummy style bage rated below 30 degrees
 1. You can add ten degrees to the negative if you include fleece liner in some bags.
 2. Sleep with several layers on
 - c. Best
 - i. Synthetic mummy style sleeping bag rated 0 or below.
 - ii. Sleep with only your closest layer on or less.
 - d. SLEEPOVER STYLE SLEEPING BAGS ARE NOT FOR WINTER CAMPING!!!
 - i. IF IT HAS A CARTOON CHARATER ON IT ITS NOT FOR WINTER CAMPING!!!
 4. Sleeping in clothing is optional some like to sleep in their clothing other schools of thought are that your sleeping bag will keep your warm so sleep a' natural.
 - a. But you should always wear a stocking cap (a.k.a. ski cap, tuke) to sleep in.
 - iv. Over the tent

1. If rain or snow is expected (remember be prepared) Tarp your tent.
 - a. Put a tarp over your tent and stake it down in the back and prop in the front when not inside.
 - b. When inside pull tarp over the doors and stake down
- v. Setting up your tent.
 1. Back of the tent into the wind
 2. West is mostly a good bet
 3. Stake down securely.

vi. IMPORTANT!!!

1. **NO MATTER HOW COLD IT GETS OUTSIDE DO NOT HAVE A HEATER or FLAME OF ANY TYPE INSIDE YOUR TENT!!! THIS COULD RESULT IN INJURY, DEATH OR OTHER TRAGIC CONSEQUENCES!!!**

Hypothermia and Frostbite

The following is an essay published by Gary Ross, an EMT-D. Although the information may seem dated in regards to his choice of materials for clothing, considering that Gortex and other synthetic materials were not widely affordable in 1987, the information is still pertinent today to surviving what he refers to as the "Silent Killer".

HYPOTHERMIA -- THE SILENT KILLER

By: Gary Ross, EMT-D

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It's August now. The last of the summer warmth. Days grow shorter. Autumn is near, and then winter...

This segment is on hypothermia. Hypothermia is a condition of general body cooling (in contrast to frostbite which is localized). It can kill you. But do not let the introduction mislead you. Hypothermia generally occurs during cold weather, but it can occur at any temperature (but generally below 60 degrees).

CAUSES:

Three factors are major causal factors in hypothermia: cold, water, and wind.

1) In a cold environment, the body must work harder to regulate heat; contact with cold air, water, snow, ground or clothing will cause heat losses due to conduction.

2) If a person is submersed in water, heat will be lost due to conduction and convection. At a water temperature of 32 degrees death occurs in 15 minutes; at 70 degrees survival for as long as 48 hours has been observed. Loss of heat by evaporation is a major contributor also. Wet skin or clothing will cool of the body quickly, especially if it is windy and/or cold.

3) Wind will cause heat loss due to convection, and will accelerate heat loss due to evaporation.

4) Hypothermia occurs much more quickly in the elderly and chronically ill.

Hypothermia is insidious. As the body's core temperature drops, more and more body systems suffer from the effects of cold. The presence and severity of hypothermia can be assessed by the signs and symptoms below. A patient is hypothermic at any temperature below 98.6 degrees Fahrenheit (rectal). 98-94

degrees is mild hypothermia; 94-84 degrees is moderate hypothermia, and below 84 degrees is severe hypothermia.

STAGES OF HYPOTHERMIA

98 - 95 degrees - Sensation of chilliness, skin numbness; minor impairment in muscular performance, especially in use of hands; shivering begins.

95 - 93 degrees - More obvious muscle in coordination and weakness; slow stumbling pace; mild confusion and apathy. Skin pale and cold to touch.

93 - 90 degrees - Gross muscular in coordination with frequent stumbling and falling and inability to use hands; mental sluggishness with slow thought and speech; retrograde amnesia.

90 - 86 degrees - Cessation of shivering; severe muscular in coordination with stiffness and inability to walk or stand; incoherence, confusion, irrationality.

86 - 82 degrees - Severe muscular rigidity; patient barely arousable; dilatation of pupils; inapparent heartbeat and pulse. Skin ice cold.

82- 78 degrees and below - Unconsciousness; death due to cessation of heart action.

TREATMENT OF HYPOTHERMIA

Two situations are possible. One is where evacuation to a medical facility is possible within several hours. The other is where evacuation will be delayed or impossible. The other parameter is stage of hypothermia.

Moderate hypothermia

Get the patient as sheltered as possible (tent, snow cave, etc.)

Remove wet clothing and replace with dry clothing. Keep patient lying down. Place patient in a sleeping bag with a second rescuer of normal body temperature. Direct skin to skin contact is preferable.

Warm stones or bottles can also be placed in the bag (be careful not to burn patient). Make sure all extremities and exposed areas (e.g. face, nose, ears) are protected. If patient is conscious and able to swallow without danger to his/her airway, give sugar and sweet, warm (not hot) fluids by mouth. **DO NOT GIVE ALCOHOL.** If evacuation is **IMPOSSIBLE** and facilities permit, immerse patient in tub of water at 105 degrees Fahrenheit. Monitor patient's temperature rectally with thermometer if possible. Continue rewarming efforts until patient's core

temperature is restored to normal. Always evacuate a hypothermic patient as quickly and gently as possible, including rewarmed patients.

Severe hypothermia

Patients in severe hypothermia are often erroneously thought to be dead. Neither pulse, nor heart sounds, nor respiration may be apparent. Handle a severely hypothermic patient with great care - VERY GENTLE HANDLING. Cut away wet clothing and replace with dry clothing.

Maintain an airway, but use no adjuncts (e.g. oral airway). Once you start CPR, DON'T GIVE UP. Get help. Do not attempt to rewarm patient unless evacuation is IMPOSSIBLE. Keep patient supine, in a 10 degree head-down tilt.

Handle every hypothermic patient very gentle. Rough handling can cause cardiac arrest and death. Get every patient into shelter, replace wet clothes with dry ones. Apply external heat if condition dictates. And give warm, sugary food and drink if patient's condition allows. Get help. If possible, have rescuers bring a heated oxygen unit, and administer to patient. Perhaps equipment can be air-dropped. Keep calm and do not become a victim yourself.

THE HYPOTHERMIC PATIENT ISN'T DEAD UNTIL HE'S WARM AND DEAD.

PREVENTION OF HYPOTHERMIA

Dress properly for current and possible conditions. Be prepared for sudden weather changes especially at elevations. Have at least one wool garment for the upper and lower parts of your body. Wool is the only material with any insulating value when wet. Carry or wear a windproof, waterproof garment. Always have a wool hat and wool mittens. Have extra clothing available especially mittens and hats. A large proportion of body heat is lost through the head. Wear suitable boots, insulated if necessary; wear wool socks, and always carry extra wool socks. Avoid getting overheated and perspiring, this cools you down - fast. Wear layers and remove clothing as necessary. Better having extra than too little. Dress sensibly and expect the worst.

Sit out bad weather. Better waiting than be overtaken by a blizzard or thunderstorm. Do not push on through the night. Make camp early and rest thoroughly. You can continue tomorrow with a much greater safety margin.

Do not get exhausted. Exhaustion promotes heat loss, and thus hypothermia. Besides, if your exhausted, you are probably drenched.

Do not get in over your head. If your experience is limited to day hikes on moderate trails, do not try to go out and tackle Mt. Washington in February. Be

smart. Learn to use a map and compass. Learn fire starting techniques. Learn first-aid. Be calm. Be prepared.

Lastly, learn about hypothermia. Know the causes, warning signs, and treatment. Learn how not to get cold.

I hope you found this information useful and important and feel free to contact me if you have any questions. Have fun in the great outdoors, but be careful. Mother Nature is never malicious, just incredibly powerful.

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Frostbite (from Outdoorplaces.com)

Field treatment of frostbite is possible but with exception to very minor cases, medical treatment should always be sought out. The most important step in treating frostbite is to make sure you will not refreeze the injured area. If you are in an emergency situation and come to a shelter, you will do far worse injury to yourself or an injured friend treating your frostbite and then moving on to the trailhead, only to get frostbite in the same areas when you start to move again. When treating yourself or someone else for frostbite you should also check for signs of hypothermia, as the two medical conditions typically go hand in hand. Never attempt to field treat third degree frostbite. It is a life threatening medical condition that needs to be treated by a trained professional.

The most logical step for treatment is to get out of the cold and out of the wind. Warm the frostbitten areas slowly, and start at the outer extremities and work your way in (toes to feet, fingers to hands, nose to cheeks) using warm breath or by tucking the hands or feet inside warm clothing by bare warm flesh (armpits and groin areas work best).

For broader areas of frostbite (when more than a toe or earlobe is involved) keep the frostbitten area elevated. Wrapping the injured area in warmed blankets. If possible immerse in warm water (104 to 108 degrees - similar in temperature to what you would bathe a new born baby in) for 15 to 30 minutes. Please note that immersion can become quite painful as the flesh begins to thaw out. You should never rub or massage the frozen areas, doing so only rubs the ice crystals around on the delicate cell walls and causes further injury and damage.

Unless your life absolutely depends on it, never walk on frostbitten feet. If blisters form during rewarming do not break or drain them. The skin as it thaws out may turn red, could tingle, burn or be very painful. If you experience pain during the rewarming process, get blisters, or have tissue damage you should seek medical attention immediately. Never rewarm a frostbitten area on your own if you can get conventional medical help and advice in a timely fashion.

Prevention of frostbite is actually very simple and for the most part is based on common sense.

- Understand the prevailing weather conditions. Remember not only air temperature but wind speed effects how quickly frostbite can occur. Be prepared for worse than what the weatherman calls for.
- Wear layers of clothing and protect exposed skin from the elements. A number of very good man made insulators are available on the market from a number of manufacturers. Wool is the best natural insulator. Cotton should be avoided if you are in conditions where you might get wet.

- Wool socks, VVS, with liner socks made of Wick Dry or Cool Max, with good boots that are waterproofed help keep your feet warm. In more extreme conditions consider wearing mountaineering boots.
- Wear a hat that will cover your ears. If you are in extreme cold or windy conditions, a ski mask or facemask is helpful. In the most severe conditions, total coverage of your face, including ski goggles may be required so that not the tiniest bit of skin is exposed on the face or head.
- Don't drink alcohol, consume caffeinated drinks or smoke when out in the extreme cold. All of these activities encourage [hypothermia](#) and frostbite.

Frostbite is a very preventable and treatable outdoor-related injury. A little careful preparation and understanding is all it takes to protect you from serious injuries while enjoying the outdoors. Jack Frost may nip at your nose, but if it's properly covered you'll never know.

Random Tips and Tricks

1. Sleep with the clothes you are planning on wearing the next day in your bag or between the sleeping bag and sleeping pad. Cold clothes are a real wakeup call.
2. Sleep with a hat on.
3. Eat lots of food with high carbs and hearty grains. Your body is a furnace feed it with good stuff. Avoid junk food.
4. Don't drink alcohol, smoke or drink caffeinated beverages. This speeds your metabolism and gives you a false sense of warmth.
5. Don't stand around the fire for warmth.
 - a. Only one side gets warm at a time
 - b. If a spark jumps your nice warm synthetic pants will melt.
6. Pack plenty of socks – warm feet + dry feet = happy campers
7. Wear deodorant. Yes, everyone smells but you can be the best smelling one of them all.
8. Use the buddy system, Pack the people into the tents. The human body is a natural 98.6 internally and gives off about 90 degrees of that. So get friendly.
9. Get out of wet clothes IMMEDIATELY.