BOY SCOUTS
OF AMERICA

BLUE MOUNTAIN COUNCIL
PIONEER DISTRICT

WINTER CAMP TRAINING HANDOUT

WINTER CAMP TRAINING

9:00	Opening
9:05	Introduction to Winter Experience (Video)
9:25	Winter Clothing/Personal Gear
9:50	Evaluating sleeping bags
10:00	Food and menus (Video)
10:15	Cooking Gear
10:30	Break
10:45	Avalanche Safety
11:30	Hypothermia
12:00	Break for Lunch
12:45	Building Igloos & Snow Shelters
1:10	Shelter Video
1:30	Evaluating Tents for Winter Camping
1:45	Winter Camping Techniques
2:00	Self Test Questions
2:30	Final Questions and Closing

"One has to lie deep in the snow to learn how warm and protective it is. A den in the snow confines the body heat like a blanket or overcoat. It is a snug place, no matter how hard the wind may howl. One who holes up in the snow understands better the mysteries of the woods in the winter. He knows why the severe weather grouse squirm their way under soft snow and be quiet. He understands why deer bury themselves in drifts, lying a half day or more with just their heads sticking out. He learns something of the comfort of the bear in hibernation."

William O. Douglas, 1950

PACK LIST FOR SNOW CAMPING

1. Pack with extra straps sewn on for tying on snowshoes, skies, etc.
2. Warm coat with hood.
3. Wool shirts/sweaters (pack one change in plastic bag).
4. Wool pants/ski pants (pack one change in plastic bag).
5. Thermal underwear - loose fitting.
6. Two extra pair of heavy wool socks in plastic bag.
7. Mittens (not gloves). Prefer a type that can be secured to self.
8. Pajamas - pack in plastic bag.
9. Wool hat (stocking cap preferred)
10. Moon boots or snowmobile type shoes with wool/felt liner.
11. Snow gaiters (can be easily made).
12. Sleeping bag 3 lb Down, or Quallofil 4 lb., Holofil II, Dacron II, or equivalent.
13. Stuff sack with sleeping bag inside of plastic bag inside stuff sack.
14. Insulated sleeping pad.
15. Large plastic bag to put over pack at night.
16. 50 feet 1/8" nylon rope.
17. Eating utensils, cup, plate (plastic or metal).
18. Cooking pot and fry pan (6" size) can be used as plate.
19. Pen or pack knife with 1/8" nylon rope attached and tied to belt.
20. Canteen or one quart plastic bottle with bright color tape on it.
21. Flashlight with alkaline batteries (extra batteries).
22. Emergency Food: 2 hot chocolate envelopes, 2 Lipton Cup-o-soup
    M & M's, Raisins, Peanuts
23. 2 firestarters (cardboard and wax type).
24. Chapstick.
25. Sunburn lotion/cream.
26. Sunglasses, snow goggles or similar.
27. Paper towels, non skid (toilet paper).
28. Wisk broom and small sponge to keep tent dry.
29. Aluminum foil (6' strip off regular roll).
30. Waterproof matches (wood type dipped in wax).
31. Compass & Map (map to be supplied by leader).
32. SOS pad.
33. Hand Soap

Winter Camping

By Brian J. Murrey

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PLANNING FOR WINTER CAMPING

Most of this information can be found in the Boy Scout Handbook. If you are going to be doing a lot of outdoor activities, this book is an invaluable source of know-how and advice.

MISCONCEPTIONS ABOUT WINTER CAMPING

Myth #1: Leather hiking boots will keep your feet warm. -- FALSE

- The snug fit of most leather hiking boots can limit the circulation of blood in the foot. Especially with thick socks on. Overboots cut generously enough to hold your foot and shoe are much more effective. The cloth stitching in leather boots can also wick moisture into the shoe. Nothing is worse that wet feet in cold winter.

Myth #2: Waterproof clothing is ideal for cold weather camping. -- FALSE

- To keep warm, in the cold, your clothing must allow body moisture to escape. Moisture that is trapped too close to the body can wick heat away through evaporation. It is better to layer your clothing on in cold weather. Wool, Gor Tex, and polypropylene garments work nice in the cold. Always wear insulated underwear.

Myth #3: Winter camping does not require much preparation. -- FALSE

- Arctic conditions exist when the wind is blowing and the temperature drops below 20 degrees F. There are only seven states in the U.S. that do not experience arctic weather. Indiana is not one of them.. It is very important to prepare and even over prepare. I've never heard anyone complain about being too warm or having too many dry clothes on a winter campout.

Myth #4: Mental attitude has little to do with winter camping. -- FALSE

- A positive mental attitude is the most important ingredient in the success of cold weather camping trips. The demands of winter will drain your energy and you'll have to rely on yourself to keep your spirits high.

Myth #5: In cold weather, tasks can be done just as quickly as in warm weather. -- FALSE

- Every effort in cold weather takes longer to complete. Be sure to bring some winter patience with you when you camp in the cold.

CONSERVING BODY HEAT - THE PRIME OBJECTIVE

There are three ways to lose body heat. Keeping them in mind will help you be much

more aware of what you are or could be doing to keep your body warm.

RADIATION - The emission of body, especially from the skin areas exposed to the elements. A good set of gloves, hat, and scarf can help best in keeping bare skin to a minimum.

CONDUCTION - The absorption of cold by the body when sitting or laying on cold ground, or handling cold objects such as metal cooking utensils and metal canteens. This is why a decent sleeping pad is required for cold weather camping. The same goes for wearing gloves. A camp stool is a must on a winter camping trip. Try not to sit on the ground.

CONVECTION - The loss of body heat due to wind blowing across unprotected body parts. This situation can also be reduced by keeping bare skin covered with hats, scarves, and gloves. It is important to keep exposure to a minimum, ESPECIALLY in a windy situation. Convection heat loss can reduce body heat the fastest. Wet clothing will accelerate this process, making staying dry even more important.

OTHER CONCERNS

Tent Placement.

Whenever possible, place your tent in a location that will catch the sunrise in the morning. This will aid in melting off any ice and evaporating any frost or dew that may have formed during the night. This will also warm your tent as you awaken in the morning.Cold air sinks. Try to place your campsite on slightly higher ground than the rest of your surroundings. Try to choose a protected site if it is snowing or the wind is blowing.

Water Consumption In Cold Weather.

Dehydration can seriously impair the body's ability to produce heat. Drink fluids as often as possible during the day and keep a water bottle or canteen with you at night.

Cooking In Cold Weather.

Cooking in cold weather will take about twice as long as normal. Always use a lid on any pots that you are cooking in. This will help to hold in the heat and decrease the overall heating time. Make sure you start hot cleaning water before you start cooking. The pots and utensils must still be cleaned. Try to keep your menu to good one-pot meals. Things like stews, chili, and hot beans stick to your ribs, lessen the cleaning time, and provide good sources of energy and fuel for your internal furnace. A good high-calorie snack before bedtime will also keep you warm all night. Stay away from an overabundance of sugar, cheese is a good high-calorie bedtime snack.

Sleeping Tip #1.

Do not sleep with your mouth and nose in your sleeping bag. The moisture of your

breath will condense in the bag, and cause it to become wet and ineffective as an insulator.

Buddy System.

Buddies can help each other pack for a trek, look after one another in the woods, and watch for symptoms of frostbite, hypothermia, and exhaustion.

Checklist.

Make a checklist of everything you need before you start to pack. Then check each item off as you pack it. This way you will not forget anything.

Keeping Warm

Keeping warm is the most important part of cold weather camping. Use the C-O-L-D method to assure staying warm.

- 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.

Clothing.

- Footwear.

As with other clothing, the layer system is also the answer for foot- wear. 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 overboots will protect the feet from water and will allow more comfortable shoes to be worn within.

- 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 overmitt. Long cuffs will keep wind and snow from getting in.

- 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 should you 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. 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. 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 it's weight in gold.

Have fun!

Every year, tens of thousands of boys will go winter camping. Although the threat of danger is always present in a winter camp, planning and knowledge can overcome this. It is very important that the Scouts come prepared. If a Scout feels that at this time winter camping is not for him, then he should not go. There is always next year and the year after and so on. If a Scout comes to camp and I do not feel that he is prepared, I will have to ask him to stay behind. Make sure you are ready, and most of all, SAFE.

Some Snow Camping Rules

SHIRTS

The outer shirt of jacket should be of a material that will stop wind and shed snow. Some slick synthetics work well.

PANTS

As with shirts, the outer pair of pants should shed snow and block wind. Some types of ski-pants do both well.

Problem with wind-resistant synthetic outer layers (save the most expensive, such as Gore-Tex) is that if they keep moisture out, then they'll keep it in, too. So perspiration, wicked away from the skin by the polypro/wool inner layers, cannot escape. At the outer layer, where it's coldest, that moisture comes close to freezing (if it doesn't in fact), and (either way) progressively blocks subsequent perspiration from escaping. Result: Damp clear through. If one cannot afford the $80-400 per garment for Gore-Tex, next best is to go with a blend of synthetics and natural fibers that'll cut the wind and let moisture pass in both directions. I prefer %60-synthetic- to-%40-natural blend, but %65-%35 has proponents. If one is properly layered, it's perfectly feasable to be comfy while the outer surface is at or below freezing. Vapor pressure will force perspiration to the outer surface of the outer garment, where it freezes and can be brushed off. Snow from the outside won't melt, and it too can (and _must_) be brushed away. When this is so, it doesn't really matter what the materail is, so long as snow doesn't adhere when brushed, and moisture passes through. I have been perfectly happy in outer shells of %50-%50.

The problem with ski-pants is that they are cut fashionably tight, whereas baggy is warmer. Again, treated "wetlock" fabrics popular for insulated skiing overpants won't let moisture escape. I go with $35 army surplus baggy wool pants, and wear home-made %65-%35 overpants (straight cut leg, draw-string waist, ankle ties (usually left untied and just tucked into Sorrels (or gaiters when the snow is deep))).

GROUND CLOTHS AND PADS

Standing all day long is uncomfortable, but sitting on snow just gets your highly vascular (big muscle) bottom wet, making you cold in a hurry. Rock may be dry, but it sucks heat even faster. I paid $6 for the cheapest closed-cell foam pad that I could find, and cut it into 2 by 2 foot squares. Everybody carries a square on the outside of the pack, so we can flop down anywhere and sit dry and insulated during breaks on the trail. "Don't leave home without it."

Winter Camp Training - Food and Cooking

Keep It Simple: The most important rule for winter camping.

Drink A Lot: 3 to 4 quarts of water per day to replace what you're loosing. Drink frequently even if you're not thirsty. Many sources: Hot drinks are best when it's cold; chocolate, apple cider, Tang, Kool-Aid, water, tea, coffee, etc.

A wide mouth water bottle works best on the trail - bright colored tape markings make them easier to find.

> **Warning signal** - Dark yellow urine. If it is dark, you are not drinking enough.

Eat A Lot: 4,000 to 5,000 calories per day during strenuous winter camping. An adult requires about 2,700 calories on a normal day.

Fill your calorie requirements by packing light weight foods in roughly the following proportions: 50% Carbohydrates, 20% Proteins, and 30% Fats.

- ◇ Carbohydrates (quick efficient energy source)
  sugar (hard candy), honey, rice, pasta, cereals, and crackers.

- ◇ Protein and fat foods (heavier, high density energy foods, slower energy sources than carbohydrates)
  Sausage, salami, pepperoni, cheeses, nuts, peanut butter, canned chili, chocolate, butter, margarine, cooking oil.

- ◇ Dried foods (light, inexpensive, can often be bought in bulk)
  Cup-O-Noodles, Cup-O-Soup, spaghetti, macaroni, Top Ramen, oat meal, pancake mix, corn meal, and dried vegetables
  Hot chocolate, hot apple cider, tea, coffee, hot Tang, dried milk

- ◇ Freeze-dried foods (very light, expensive)
  Wide variety of types available, check sporting goods stores and outdoor goods catalogs.

- ◇ Limited Fresh fruits & vegetables (heavy, freeze damage)
  Can be made-up with vitamin fortified fruit drinks, or on extended trips take vitamins.

◇ Snacks (for eating between meals or while on the trail to keep a continuous supply of fuel flowing to your body)

Raisins, peanuts, M&M's, cut up cheese, salami or sausage, hard candy, or granola bars, etc.

◇ Extras (add a lot to your eating enjoyment)
sauce mixes, bouillon cubes, honey, syrup, brown sugar, popcorn, herbs and spices, etc.

Cooking: One-pot Simplicity - Makes food preparation and cleanup simple.

Cooking area layout: Many cooking area layouts will work equally well. The best arrangement for a group is dependent on the site selected, the number in the group, the type of equipment being used and the group's preferences. the type of winter camping (fixed or mobile) also has a major effect.

Fixed Site - will generally be larger. They can also include more "nice to have features" (storage areas, weather cover, fire barrel, clothing/gloves/boots drying area, etc.)

Mobile Site - are generally smaller and simpler than fixed sites. they generally have to be set up in an hour or so at the end of a hard days travel.

Stoves - Camp or backpacking stoves need to be used with an insulating support (1/4" plywood or fiber board of the appropriate size) so they won't sink into the snow.

Fires - Build on insulating base (earth or an old trash can lid work well) or in a fire barrel.

Caution: Take care in working with stoves and fires with gloves and insulated clothing on. They can easily be burned or melted before you feel the heat.

Food and Water Storage - Must avoid freezing some items, example, water jugs - bury them in the snow (mark location)

Hypothermia -- The Silent Killer

By Gary Ross, EMT-D

Hypothermia is 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 incoordination and weakness; slow stumbling pace; mild confusion and apathy. Skin pale and cold to touch.

93 - 90 degrees - Gross muscular incoordination 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 incoordination 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 laying 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 respirations 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.

<u>THE HYPOTHERMIC PATIENT ISN'T DEAD UNTIL HE'S WARM AND DEAD.</u>

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.

NOTE: Special hypothermia thermometers are available which measure between about 70 and 100 degrees Fahrenheit. I recommend carrying one in your first-aid kit on all cold weather excursions. Contact me for information on where you can purchase one.

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.
Gary Ross, EMT-D

The Wind Chill Index

	Environmental Temperature (F°)																		
Calm	40°	35°	30°	25°	20°	15°	10°	5°	0°	-5°	-10°	-15°	-20°	-25°	-30°	-35°	-40°	-45°	-50°
Wind Speed	Apparent Temperature (F°)																		
5 MPH	35°	30°	25°	20°	15°	10°	5°	0°	-5°	-10°	-15°	-20°	-25°	-30°	-35°	-40°	-45°	-50°	-55°
10 MPH	30°	20°	15°	10°	5°	0°	-10°	-15°	-20°	-25°	-35°	-40°	-45°	-50°	-60°	-65°	-70°	-70°	-80°
15 MPH	25°	15°	10°	0°	-5°	-10°	-20°	-25°	-30°	-40°	-45°	-50°	-60°	-65°	-70°	-80°	-85°	-90°	-100°
20 MPH	20°	10°	5°	0°	-10°	-15°	-25°	-30°	-35°	-45°	-50°	-60°	-65°	-75°	-80°	-85°	-95°	-100°	-110°
25 MPH	15°	10°	0°	-5°	-15°	-20°	-30°	-35°	-45°	-50°	-60°	-65°	-75°	-80°	-90°	-95°	-105°	-110°	-120°
30 MPH	10°	5°	0°	-10°	-20°	-25°	-30°	-40°	-50°	-55°	-65°	-70°	-80°	-85°	-95°	-100°	-110°	-115°	-125°
35 MPH	10°	5°	-5°	-10°	-20°	-30°	-35°	-40°	-50°	-60°	-65°	-75°	-80°	-90°	-100°	-105°	-115°	-120°	-130°
40 MPH	10°	0°	-5°	-15°	-20°	-30°	-35°	-45°	-55°	-60°	-70°	-75°	-85°	-95°	-100°	-110°	-115°	-125°	-130°

	Little Danger of exposed flesh freezing.
	Increasing danger of exposed flesh freezing (flesh can freeze within 1 minute).
	Great danger of exposed flesh freezing (flesh can freeze within 30 seconds).

Summary: Cold Injuries

Hypothermia is a lowering of the core body temperature occurring when heat loss exceeds heat production. It is a dangerous disturbance of body function. Mild hypothermia (above 93 degrees F - patient conscious, shivering, able to walk) is treatable in the field. Sever hypothermia (below 93 degrees -- patient unconscious, not shivering, unable to walk) requires rewarming in a hospital.

Signs and Symptoms of Hypothermia

*Mental
- Deterioration in decision making ability
- Slow and improper response to cold
- Apathy, lethargy
- Increased complaints, decreased group cooperation
- Slurred speech, disorientation progressing to incoherence & irrationality

*Muscular
- Shivering
- Loss of fine motor ability progressing to stumbling, clumsiness, & falling
- Muscle stiffness and inability to move (in severe cases)

Treatment for Hypothermia

*Mild Hypothermia
- Prevent Further Heat Loss
  - Dry
  - Remove from cold
  - Insulate
- Actively Rewarm
  - Hydrate, Hot drinks
  - Food
  - Sleeping bags

*Severe Hypothermia
- Evac to Rewarm
  - Dry, insulate
  - Prevent further heat loss, (apply heat)
  - ABC's
  - Handle gently

Frostbite is a local freezing injury classified as frostnip, superficial or deep. Frostbitten tissue is cold, gray, white or mottled. Frostnip only affects the skin and is easily treated with immediate rewarming. Superficial and deep frostbite progress into underlying tissue layers and should be rewarmed rapidly in warm water.

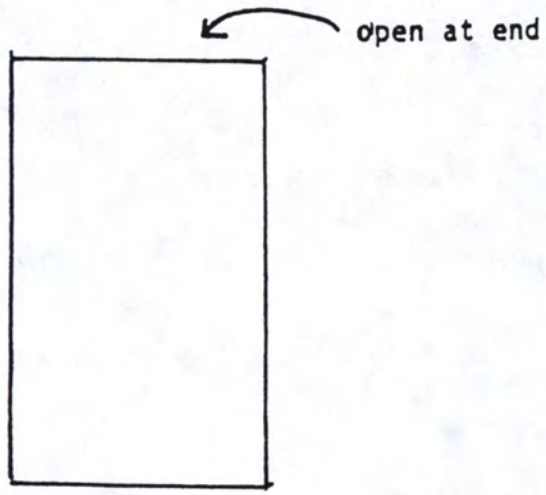
Treatment for Frostbite

* Delay rewarming until it can be done once and done well

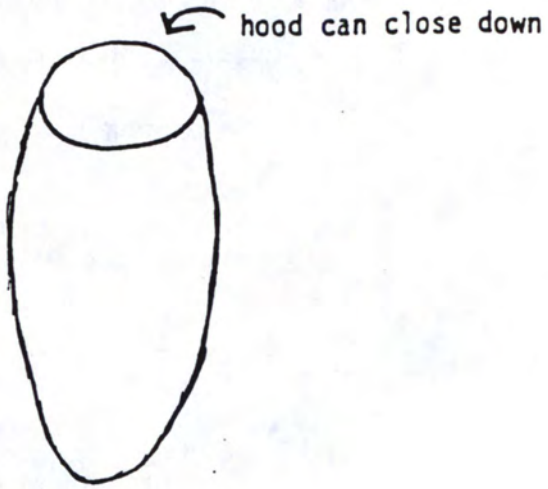
* Rapidly rewarm in warm water
  - The water should be between 100 and 108 degrees
  - Completely immerse the frozen tissue
  - Use a large basin
  - Thaw completely

*Post-thaw care
- Protect the thawed tissue from trauma
- Elevate to reduce swelling
- Place pads between toes and fingers
- Do not constrict the extremity
- Prevent refreezing

Sleeping Bag Construction



Square Cut Sleeping Bag



Mummy Bag

ROUGH RULES OF THUMB:

1. A four pound square cut bag will have the same loft as a three pound mummy bag.
2. Mummy bags are warmer because the hoods can be gathered up and closed to face size.
3. A three pound Quallofil is about as warm as a four pound Hollofil II of equal size and shape.
4. Down and Quallofil are about equal in warmth for the same thickness.

Tent Selection Guide Lines

A tent for use in the winter should be a 4 seasons tent. A 3 seasons tent is one suitable for Spring, Summer and Fall. The fourth season is Winter.

The basic difference between a 3 season tent and a 4 season tent is that a 4 season tent can be picked up after setting it up and place over soft snow. It can also be picked up and any dirt that accumulates in the tent can be dumped out prior to packing it away when used in the summer. There are no attachments to the ground required to set it up.

Don't however overlook a tent requiring a single guy line that can be tied to a tree or anchored to a snow peg or a deadman.

A deadman consists of two sticks tied together at 90 degrees apart from each other with expendable cord and a loop tied to it so that the deadman can be buried deep into the snow with the loop sticking out of the snow. Attach the tent to the loop. The next day the deadman will be difficult to retrieve and can be abandoned if required.

Deadman

Most 4 seasons tents have provisions for cross ventilation to reduce condensation within the tent. This is a very important feature. Check to see that you can still have ventilation in the rain and snow. Tents with small rain flies do not provide for good ventilation during rain or snow conditions.

The 4 seasons tents do come in a wide range of designs. Low cost versions have very abbreviated rain flies to reduce manufacturing cost and thus selling cost. These designs are meant for the uninformed buyer that only shops based on price only. You then end up with a very poor tent.

There are good buys in tents with fairly useful rain fly coverage if you shop around. These tents are just a little more that the bottom line tents that are purchased based on cost alone..

Self-Test--Winter Activities

1. When sleeping outside in the winter your greatest concern for keeping warm is to:

   ___ a. Have an oversize down bag good to 50 below.
   ___ b. Wear extra layers of clothing to bed.
   ___ c. Insulate below your sleeping bag to conserve heat loss.
   ___ d. Always use a space heater or stove.

2. In preparation for bed you should:

   ___ a. Sleep in the clothes you have on.
   ___ b. Put on an extra layer of clothing.
   ___ c. Change into new clothes for sleeping.
   ___ d. Sleep in the nude or nearly so.

3. Down bags should be fluffed prior to getting in. This:

   ___ a. Redistributes the down.
   ___ b. Gets rid of any sneaky mice.
   ___ c. Provides for maximum loft and insulative value.
   ___ d. Airs the bag out from the previous night's onion soup.

4. If your feet are getting cold:

   ___ a. Move around to restore circulation.
   ___ b. Put on your hat.
   ___ c. Lace your boots tighter.
   ___ d. Wear lots of cotton socks.
   ___ e. Drink some warm fluids.

5. Fishnet underwear is often preferred because:

   ___ a. It makes neat wafflelike designs on your back.
   ___ b. Helps to keep you dry.
   ___ c. Effectively traps warm air next to your body.
   ___ d. It gives your skin a chance to breathe.

6. Wool is often preferred over cotton because:

   ___ a. It insulates even when wet.
   ___ b. Acts as a more superior wind breaker.
   ___ c. Traps air more effectively.
   ___ d. Does not get as clammy.

7. In food preparation:

   ___ a. One-pot meals are preferred.
   ___ b. Fried foods like bacon, pancakes, hash browns are a must.
   ___ c. Always start from scratch.
   ___ d. Dinner should be a relaxing meal after a hard day about 8:30.
   ___ e. Dehydrated foods are the best.
   ___ f. Prepare as much as possible in advance, at home.

8. Fires are BEST STARTED by:

___ a. Book matches
___ b. Lighter
___ c. Stick matches
___ d. Firewater
___ e. Firestarter like cardboard and paraffin
___ f. Small candle

9. QUICK ENERGY can be obtained by:

___ a. Drinking a plain cup of strong tea or coffee.
___ b. Eating some chocolate.
___ c. Chewing on some meat or nuts.
___ d. Munching on fruit cake, brownies, date bar, etc.
___ e. Drinking alcoholic beverages.

10. HYPOTHERMIA means:

___ a. Being too hot when skiing.
___ b. Death from exposure.
___ c. A student is hyper in class and needs to see the nurse.
___ d. Death from cold and exhaustion.
___ e. Something to do with a nervous disorder.

11. MOST hypothermia cases develops in air temperature of:

___ a. Subzero.
___ b. Zero to 30 degrees.
___ c. Right on the freezing mark.
___ d. 30-50 degrees.
___ e. 50-65 degrees.

12. As a hypothermia victim:

___ a. You are losing body heat faster than it can be produced.
___ b. You will lose control of your hands.
___ c. Cold on your brain deprives you of judgment.
___ d. Your internal body temp is slowly but surely decreasing.
___ e. Without treatment you will go into a stupor, collapse, die.

13. Major causes of hypothermia:

___ a. Getting wet
___ b. Exposure to wind
___ c. Lack of food.
___ d. Inability to diagnose weather and changing conditions.

14. You can detect hypothermia by the symptoms of:

___ a. Uncontrollable fits of shivering.
___ b. Vague and slow slurred speech.
___ c. Memory lapses, incoherance.
___ d. Immobile fumbling hands.
___ e. Frequent stumbling.
___ f. Drowsiness
___ g. Apparent exhaustion -- inability to get up after a rest.

15. Rank in order (1, 2, 3, etc.) methods of obtaining water, the best way, for a 2 to 3 day winter camp trip.

___ a. Melt from snow.
___ b. Secure from an open stream.
___ c. Melt from ice.
___ d. Chop a hole in the lake.
___ e. Carry with you in an unbreakable plastic container.

16. In selecting menu items: You should make a point to:

___ a. Bring lots of sugary products.
___ b. Avoid fatty foods.
___ c. Plan lots of hot liquids.
___ d. Select lots of meat and fruit.

17. In selecting clothing items you should:

___ a. Rely exclusively on prime grade goose down.
___ b. Include at least one set of wool.
___ c. Wear cotton exclusively to create the "jean look."
___ d. Use all nylon clothing.
___ e. Have extra clothing along.

18. Proper dressing for winter activity should include:

___ a. A super thick heavy-duty parka for trail use.
___ b. A one-piece suit (snowmobile) to minimize heat loss.
___ c. Layers of wool, cotton and synthetic.
___ d. A hat for your head.
___ e. Tight-fitting ski wear.

19. Materials like Polarguard and Fiberfill II often are used in place of down because:

___ a. They are less expensive.
___ b. They resist moisture.
___ c. They insulate equally well for the same thickness.
___ d. They are much more compact than others.

20. Some potential conditions that may cause hypothermia are:

___ a. Canoeing in the early spring and late fall.
___ b. Participating in outdoor winter-snow activity.
___ c. Stranded in your car during cold weather.
___ d. Duck hunting in late fall storm.
___ e. Backpacking in the mountains, during light shower in higher elevations.
___ f. Walking home from school just after a shower from practice.
___ g. People who often skip meals, but work at a steady pace.
___ h. Skiing at subzero temp with wine flask consumed.