# Winter Survival

***If your survival preparations don't cover subfreezing conditions you are only 50% ready.***

The great majority of survival skills and survival equipment work well in dry and temperate weather. In the dry summer conditions you can survive for a while by simply not doing anything stupid. Moderate clothing and basic shelter items will get you through the chilly damp conditions of late Spring and early Fall. At home, mild weather survival focuses on having safe water and enough food. But winter conditions make survival anywhere an immediate and constant challenge. In winter, Mother Nature tries to kill you. Cold takes no prisoners. Whole armies have been wiped out by General Winter. The survival battle comes down to maintaining the body's temperature. This is accomplished in four actions:

1. Generating heat internally through the consumption and metabolization of high calorie food and the necessary water to process it. Consider this fueling your furnace. Food requirements are much higher in cold weather.

2. Keeping cold out of the body. Eating cold food, drinking cold liquids and breathing in cold air quickly lower the body's temperature.

3. Preserving body heat. Breathing out warmed air, standing in cold winds, contact with the cold ground, getting wet, not wearing adequate clothing and failure to cover the head will burn away calories (heat) and lead to hypothermia.

4. Gathering heat from external sources. Getting into a warm place, standing in the sun, drinking warm liquids, eating hot food, standing by a fire and breathing warmed air reduces heat loss.

Civilization has focused on providing a warm environment. Our homes are heated. Our vehicles are heated. Even in winter our exposure to cold is brief. Well-fed and warm most of the time, we are all in poor condition to survive long-term cold under survival conditions. When we think of survival we think of winter fire, but all animals and some human cultures survive the harshest cold conditions without any form of external heat. They depend on heat conservation and high calorie food metabolism. Two things are certain:

- Inadequately fed and clothed humans who are exposed to severe cold or chilly wet conditions for too long will die.

- If you live in most areas of the United States and Canada and have not acquired the skills and equipment for long-term cold weather survival you are at high risk 20 to 70% of the year.

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**The body loses heat in 5 ways:**

1. Respiration: Breathing in cold air, heating it in your lungs and then exhaling the warmed air back out is a significant source of heat loss. A simple facemask, ski mask or muffler over the nose and mouth can conserve some of this heat.

2. Evaporation: Sweat and dampness on clothing evaporates and carries away heat. Alcoholic beverages give the allusion of warming while evaporating through the skin and taking away more heat. Rain, snow and even fog will dampen hair skin and clothing to take away your heat.

3. Convection: Air (wind) passing over the skin carries away heat. That's great on a hot day, but deadly in the cold. Get out of the wind ASAP! On the move wear a wind proof poncho.

4. Conduction: Nature hates an imbalance. If you are in contact with ground, rocks, metal, snow, etc. that are colder than you are, energy will flow from you to the cold surface. Minimizing contact and good insulation are the keys to preventing this heat loss. Wet clothing loses 90% of its insulation value with water having 240 times the heat conductivity of dry air. STAY DRY!

5. Radiation: the whole body radiates heat/energy into the environment. Adequate clothing is the only way to reduce this radiation. Since heat rises, the head and shoulders are the greatest source of heat loss and since the brain is most heavily supplied with blood circulation, the head is the last part to *feel* cold. Listen up! Hoods, stocking caps and those big fur caps will save your life. One day we were out in 10 below zero winds. We entered an unheated building and just took off our caps. We immediately started to shiver until we put them back on. Another device for combating radiated heat loss is the "Space Blanket". These aluminized blankets can be used as ponchos or rigged as shelters. They reflect body heat back to you. They can also be used to catch and reflect campfire,

stove heat or solar warmth onto your body. I have recovered from damp cold clothing in this way.

The two chief dangers of cold exposure are hypothermia and frostbite. A person who is exhausted, hungry or sick is more susceptible to both of these life and limb threatening conditions.

**Hypothermia**

Hypothermia occurs when the body's core temperature begins to fall. This happens when the body is no longer able to generate or hold more heat than it is losing. Being exposed to cold, wind and rain with inadequate shelter clothing and food are prime causes of hypothermia. Shivering is the warning sign of impending hypothermia. The body is using the heat generated by shivering as a last ditch effort to maintain its core temperature. This occurs as the body temperature drops towards 90 degrees. Below 90-degrees slurred speech, dulled comprehension and jerky muscle (staggered walking) movements indicate the need to immediately get this person out of the cold and introduce warm liquids. At 80 to 85-degrees the victim will lose contact and drift into a stupor. Pulse and respirations slow indicating advanced hypothermia. At this point the person will continue to decline even with external warmth provided. In advanced hypothermia the cells reach a point where they are too cold to produce heat therefore creating a progressive condition that only a hospital can reverse with warm IVs. This is why it is important to recognize hypothermia at its earliest stages and act. At 80 to 78-degrees the victim will become unconscious and will suffer cardiac failure and hemorrhage into the lungs resulting in death. In addition to getting the victim into a warn environment and giving them hot sugary liquids while they are still conscious, you can rewarm them by placing heat packs under their arms and on both side of the neck. Forearm emersion in warm water is another effective rewarming method. Simply place both forearms under warm running water or wrap both forearms in warm damp towels. Caution: A person who has reached the advanced (semi conscious) stage should not be rewarmed too fast externally as this may drive the cold external blood into the core and cause cardiac fibrillation. Of course if immediate hospital treatment is not available you cannot wait to rewarm.

**Frostbite**

Is the actual freezing of external body tissues. Frostbite can result in loss of body tissues, amputations, gangrene and death. Fingers, toes and ears are the most often frost bitten, but prolonged exposure can result in the loss of larger (hands, feet, legs) body parts. Any part of the body that feels very cold can suffer frostbite if it is not protected and warmed promptly. The sensation of cold turns painful as circulation stops. As nerves freeze the sensation is lost and nothing is felt. The skin becomes gray or yellow-white and ridged to the touch. Do not rub the part or forcefully remove shoes or gloves. Once the victim is brought into a warm environment and the area begins to thaw it will become swollen, red and painful. If the color goes to black, tissue loss is probable.

Frozen body parts can be thawed by emersion in warm (not over 105 f) water or placing them in the armpits. Never expose a thawed body part to potential refreezing! A previously frozen tissue is much more susceptible to refreezing and the loss of that tissue is much more likely after a second freeze. Damaged tissues should be wrapped in soft, thick, sterile (if possible) bandages and kept warm. Seek medical attention as soon as possible

Wear thermal socks in cold weather and have a spare pair handy. Tight fitting gloves actually make the fingers more prone to frostbite. Wear insulated gloves and in severe cold wear mittens.

**Winter Survival At Home**

Fortunately survival threats like civil disorder and terrorist attacks are les frequent in cold weather, but power outages, fuel and food shortages are greater. When balancing the hunker-down vs. hit-the-road options, staying home as long as possible may be best. Even an unheated house is better than a tent. You may be able to ride-out the situation or at least hang on until the weather improves before evacuating. You must be set up to get by without any utilities (e.g. gas, water, electric) and support (e.g. medical, fire, police, groceries) for several months. It is highly unlikely that you will be able to store enough fuel to run a generator and heat your whole house for several winter months. So you will have to adopt a “camp at home” configuration.

Camp at home simply means that you will reduce your needs by utilizing camping supplies in the home. You can take an interior room and seal it off with plastic sheeting. This will be your one room shelter for the duration. You may be able to have enough fuel for a small camp heater to help heat one room. Even better, put up a tent in your living room and stay in there. A small tent will be easy to heat and will conserve body heat as well. The best way to stave off the effects of cold is to heat hot food and drink hot liquids. A good camp stove with lots of fuel cylinders is a must. Get good sleeping bags for everyone! An army surplus “mountain” rated bag is good to about 10-degrees above zero and costs about $40.00. In an unheated house, on a mattress with a few blankets it will be good at colder temperatures. For about $180.00 you can get the army surplus “extreme cold/arctic” bag rated to 40-degrees below zero. Of course commercial bags are available at higher prices with equivalent ratings. The body burns a lot more calories in cold weather, so you need to have hearty foods stored away. Fortunately the food in your freezer can be kept frozen or at least refrigerated for some time if the power goes off. You will need to have a strong animal proof box to store this food outside in the shade. You can store food in an unheated garage or shed or in large metal ammunition boxes like the ones designed for 40mm rounds. If you have a wood stove or fireplace, stock up on wood. Stoves are efficient to heat a room or two, but fireplaces without a running fan are not much help. You will need a good camp heater to keep your indoor tent or sealed

(not air tight) room warm. A Coleman ™ 3000 BTU heater will run 7-hours on one 16 oz propane cylinder. That's enough to heat a tent or small room for part of each day. You are going to have to spend about 12-hours a day in those sleeping bags to conserve your own heat and energy. The heaters will have to be turned off when you're in your bags. Even so, you will need to have 50-100 cylinders to heat and cook with through the worst of the winter. You will want to have hand-crank powered flashlights and radios, but in the case of winter survival, candles and gas lanterns are sources of heat as well as light and should be used safely. Keep your carbon monoxide detector and smoke detector working. Have fire extinguishers handy. Avoid leaving unattended candles, stoves and lanterns. Although the camp heaters and stoves are generally safe for indoor use they are hot and they burn oxygen, thereby creating a hazard you must be aware of. While the survival pack and the ability to survive on your own is an essential. If your home gets below freezing for any length of time the water pipes will freeze and burst, causing flooding. If you cannot keep them warm, let the water trickle from each faucet. If that fails, turn off the water and drain the pipes. The prepared home is a key element of independent, self-reliant survival capacity, abandoning the home is always a last resort. This is especially true under winter weather conditions.

**Vehicular Retreating**

If you must leave home and you can drive your vehicle to a safe destination that is what you should do. You should have your survival packs in tote bins ready to load in the vehicle. Other tote bins should have your additional sleeping bags, tents, stoves, heaters, fuel and food. The scenarios to follow assume that you will either not be able to drive out or will have to abandon your vehicle at some point. This is a possibility you must consider.

**Short Distance Retreating**

If you cannot stay in your home you will want to minimize the distance to a safe place. Your good weather destination may be too far to carry what you need for winter survival, so you may need to have a short term site within a few hours hike to hold-up in until the weather improves. Abandoned buildings, barns, sheds, stored boats or motor homes, etc may be considered. If you have a roomy vehicle and a place to hide it off the main roads, that may be your optional shelter for a while. Things like tents, heaters, sleeping bags and food can be hauled a short distance to establish this temporary retreat.

**Load Sharing**

If you have a large family or group your chances of a survival in winter are greatly improved. By spreading the loads of extra shelter, fuel and food over more people you can all be warmer and better fed. Sharing body heat in shelter will also be a big help.

**Sleds and Snow Shoes**

If there is more than 4-6 inches of snow on the ground walking with a full pack will be difficult, but pulling a sled becomes a good option. If heavy snow is frequent in your area, you may want to get into snowshoeing or cross-country skiing as a healthy sport. It's great exercise and gives you mobility others will not have. Pulling any kind of toboggan or sled will let you carry along what you really need for winter survival.

**Caches**

If safely stashing extra supplies of food, fuel, blankets and shelters along your route are an option, do so. Unfortunately there are few safe places to stash anything today and locating your cache in winter may be challenging. Buried stashes may be hard to remove from snow covered and frozen ground. Depending on these life saving items being there when you arrive cold and hungry could be risky.

**Using Natural Resources**

One of your best options is learning "back-to-basics" survival skills. The pioneers and the early explorers *did* survive winter after winter without most of the "survival" supplies we now take for granted as necessities. They hunted, fished, trapped and foraged for food. They used hides and bark and branches to build shelters. They made fires and kept warm. They made beds from pine branches, grass and leaves. They were not "comfortable" and they were not "well fed", but they *did* survive through winters. If you acquire some of these basic "wilderness survival" skills combined with your pack full of modern survival equipment you could survive through a winter without additional supplies. I must point out that the having a good knife, sharpening stone, hatchet, small shovel, fire starters (flints, magnesium, etc), fish hooks, line, and of course, a small caliber (22) pistol or rifle in your gear would be essential to using natural resources for food, shelter and warmth.

**Conserving Body Heat and Energy**

Always be prepared for what the weather could be for the time of year, not what it is. Those nice warm fall and spring days can turn into cold, wet windy days that can bring on hypothermia in a few hours. Even a summer night can be deadly for someone in shorts and T-shirt. The old theory that if you fall asleep in the cold you will never wake up is a myth. Yes, if you exhaust yourself fighting a storm or you allow yourself to get wet (rain or sweat) and tired *before* you stop and fall asleep, you may not wake up. But if you stay dry and conserve your body's heat and energy supply, your chances of survival are actually improved. Generally a sleeping person will wake up when the body gets too cold and move around just enough to generate a little heat. There are cases where survivors huddled together under a few tarps or dug into a haystack and dozed on-and-off for weeks before emerging to be found. Always have a rain poncho available in your pocket, purse, locker, and glove compartment and of course a good one in your pack. The greatest heat loss is through to top of the head. The body

supplies the brain with warm blood and heat rises, so the head seldom feels cold, but it is sucking heat from the rest of your body. The neck also radiates a lot of heat that can be conserved with a turned up collar and/or a scarf. A wool cap or ski mask is a must have item. Another big source of heat loss is respiration. You breathe in cold air that then sucks heat from inside the body which you blow away when you exhale. A simple facemask or the ski mask can help conserve some of this heat. So a pocket poncho (or large plastic bag), a dust mask and a wool cap alone could save your life if caught in bad weather. Keep a pair of thermal socks under your shirt when out in winter. If your feet get wet you have dry socks. If your gloves are lost, you can use them as mittens. Don't eat snow. Dehydration is a real danger in cold weather. The humidity is usually low and moisture is lost through respiration. Plan on drinking plenty of liquids, but not cold liquids. That will lower your body's core temperature. Stop and heat water. Make tea or coffee if you have it. Warm, sweetened liquids will add heat and energy. Avoid long exposure to wind that will take heat from you by convection. Avoid long-term contact with the cold ground or objects such as rocks, metal, etc. that will pull away heat through conduction. Avoid sweating or becoming wet from snow and rain as this will ruin the insulation value of your clothing. . Stay dry! Avoid drinking alcohol. That takes heat away as it evaporates through the skin. Do increase your food intake and drink hot beverages to fuel your body's heating system.

**Winter In Camp**

Camping out for extended time in winter is a last resort. The requirements for adequate food, water, fuel and shelter are much higher than for mild weather. Most people will not be able to haul the necessary weight far from their vehicle (road). Large groups will be able to do better than small families or individuals under these conditions. Camp locations must be selected with care. Select a site that is sheltered from the wind and has adequate access to fuel (wood) and water. Cold air travels down, so avoid valleys and ravines. Camp in the lee side of ridges. If you can build up a sleeping platform a few feet off the ground it will be 5 – 10 degrees warmer. Underground shelters and basements are miserable in cold weather. Most "camping" tents are designed for mild weather. They are well ventilated. This is great for hot weather, but not so good in cold weather. Look for "expedition" or "mountain" tents that are designed to withstand wind and have smaller closable vents. Select a tent that is just a little bigger than the number of people who will occupy it. If there are two of you, get a "three-man tent", etc. Too large a tent will be impossible to keep warm. Too small a tent will bring you into contact with the cold walls and not let you do anything but sleep in it. If you can have only one tent and it is a warm weather tent, consider making up a cover for the ventilated roof. Better yet, cover the roof under the rain fly with reflective Space Blankets to reflect the heat back into the tent. Years ago, I spent two very cold nights in an improvised dome shelter made from clear plastic tarps spread over bent saplings. It was quite warm at night and was a greenhouse of warmth when the sun came out. Clothing, blankets and sleeping bags become damp from outside moisture and sweat. This causes them to lose

significant insulation value. They should be dried each day by hanging them out in the warm sun or letting them freeze and then beat out the ice crystals each day.

**Conclusion**

Winter survival is all about energy (food & fuel) management. You must be able to internally and externally create more calories of heat than you lose staying warm and doing work. You must create, gather heat, and save heat. Summer forgives errors, winter does not.