

IMMERSION HYPOTHERMIA

Hypothermia is a subnormal (below normal 96.6° F) temperature in the body core. A person can fall victim to hypothermia anytime the temperature is below about 90° F, even during a summer rainstorm. In fact, people are more likely to experience hypothermia in a fall or spring rainstorm than in an extreme cold winter. Preparation is the key. In winter, you dress and are prepared for the cold. In that spring rainstorm, people do not expect or are prepared for the loss of heat caused by the rain and the wet clothing.

The effects of a reduce body core temperature are shown in the chart to the right. Feeling cold, shivering, loss of mental function, trouble talking, trouble walking, trouble doing simple tasks, forgetfulness, irrational behavior (like taking off your gloves or clothes), unconsciousness and then death.

Immersion in cold water is potentially deadly. In fresh water with ice, the water temperature is around 35°F. At that temperature, a person will lose consciousness in about 20 minutes and, if they do not drown, will be dead in about one hour. See the plot to the left.

First Aid for Immersion Hypothermia Victims

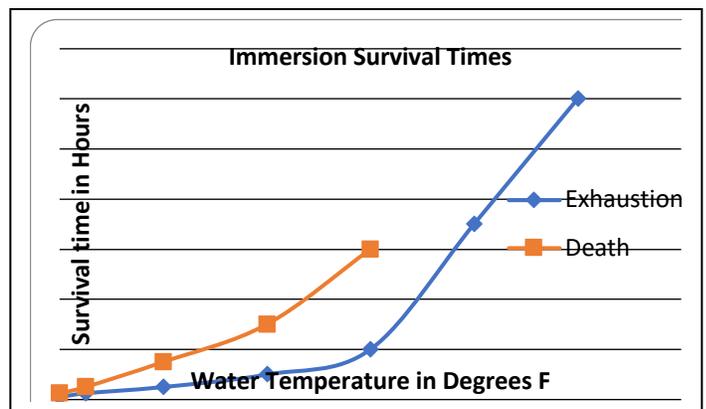
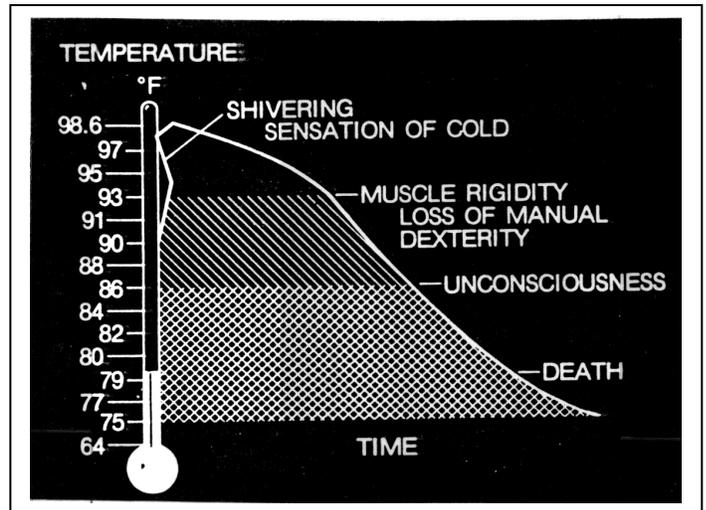
Rescue the victim. Get him out of the water as soon as possible using a technique that does not unduly endanger the rescuers and treats the victim gently. Have a plan and carry it out quickly and efficiently. Waste no time. Seconds count.

Make sure the victim has an open air way and is breathing. There is a danger of drowning as well as hypothermia.

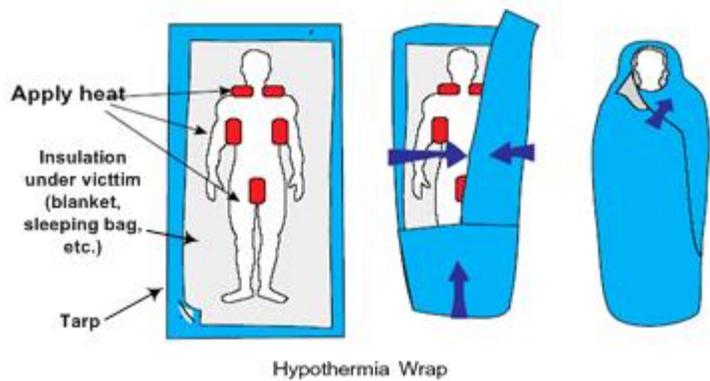
Seek professional help. Send some of your patrol for help as soon as the victim is stable. If you use a cell phone make sure you give your location as precisely as possible and make sure you provide you cell number for a call back, if necessary. Remember that a 911 call may not be answered by the closest emergency responder. **If you are calling from the state forest preserve use the DEC emergency dispatch number 518-402-8013.**

In the mean time, prevent further heat loss.

- Gently move the victim to a shelter area and warmth;
- Gently remove all the wet clothing – cut it away if necessary. The wet clothing accelerates heat loss.



- Insulate the victim from the cold environment with sleeping bags or blankets. **Add plenty of additional insulation under the sleeping bag.** Use extra clothing, pads, sit-upons, etc. The **hypothermia wrap** is shown to the right. **Start on the ground with outer tarp, followed by ground insulation, followed by blankets/sleeping bag, followed by inner vapor barrier, followed by victim. Wrap each layer around victim** being sure to tuck layers thoroughly to keep heat in. If you



- have self-heating hand/foot warmers, activate and then cover the warmers with dry cloth (sock or bandana) to avoid direct skin contact with the victim and place as noted in figure before wrapping the victim. Alternatively, use a stove or fire to heat water to put in water bottles as external heating instead of hand/foot warmers. If there is any delay in making hot water, wrap the victim and then unwrap when the water is ready. Again, protect the victim from burns. If you can't hold the water bottle in your bare hand, it's too hot. Check the external heat periodically and replace/re-heat. A wood fire is good for warming water (to use in your water bottles) and keeping the rescuers warm but do not consider it as the primary source of direct heat for the victim.
- If the victim is conscious, provide warm fluids. Sugary fluids like warm Tang would be good. Also, high carbohydrate and sugary foods would be good. **DO NOT GIVE COFFEE, CAFFINATED BEVERAGES OR ALCOHOL.**
- Treat the victim until professional help arrives.

If the victim is unconscious and unresponsive, continue to treat. Hypothermia victims can be in a state called a "metabolic icebox." The victim appears dead, no observable signs of respiration or pulse, but is still alive. There was a climber on Mt. Everest who was abandoned for dead by his fellow climbers but walked into camp the next morning. Keep up treatment until a medical professional says otherwise.

Hypothermia victims are very susceptible to ventricular fibrillation. Physical jarring or rough handling can initiate this. A victim could be alive when placed on the rescue sled but dead fifteen minutes into a bumpy ride. This is why it is important to keep the victim warm and stable until professional evacuation can be arranged. Do not allow the victim to walk.

Rescue Breathing and CPR (Cardio Pulmonary Resuscitation) (If you have **Current Training**

Qualifications). If the victim is not breathing you may perform rescue breathing but **do not perform CPR if there is any heartbeat, no matter how slow or weak the pulse because there is significant risk of ventricular fibrillation.** If checking for heartbeat, you need to feel for carotid pulse for at least 3 minutes. If no pulse then CPR is appropriate and it should be done at about **half the normal rate** to avoid making blood CO2 levels too low due to low metabolism. **CPR is not appropriate for a hypothermia victim with any heartbeat as it is very rough handling and it will induce ventricular fibrillation.**

Remember in unconscious hypothermia victim, you will not be able to determine if the victim is dead or alive.

Do not consider the victim as dead while cold in the field. Death can only be determined when the victim is warm in the hospital.

Your job is to maintain the victim until professional evacuation and medical help can be obtained.