Hypothermia Treatment

Self-Care at Home

- The first priority is to perform a careful check for breathing and a pulse and initiate cardiopulmonary resuscitation (CPR) as necessary.
- If the person is unconscious, having severe breathing difficulty, or is pulseless, call 911 for an ambulance.
- Because the victim’s heartbeat may be very weak and slow, the pulse check should ideally be continued for at least 1 minute before beginning CPR. Rough handling of these victims may cause deadly heart rhythms.
- The second priority is rewarming.
  - Remove all wet clothes and move the person inside.
  - The victim should be given warm fluids if he or she is able to drink, but do not give the person caffeine or alcohol.
  - Cover the person’s body with blankets and aluminum-coated foils, and place the victim in a sleeping bag. Avoid actively heating the victim with outside sources of heat such as radiators or hot water baths. This may only decrease the amount of shivering and slow the rate of core temperature increase.
  - Strenuous muscle exertion should be avoided.
- Some cold exposure, such as cold hands and feet, may be treated with home care techniques.

Medical Treatment

- The doctor will first assess for immediate life threats, which are primarily the lack of breathing or a pulse. If the victim is not breathing, he or she will have a tube placed to help them breathe. If the victim does not have a pulse, chest compressions will be started.
- If the person is not responding, he or she will receive a dosage of the vitamin thiamine and have a blood sugar level checked to make sure it is not low. In this way, doctors make sure these are not the reasons why the person is unconscious.
- If the heart appears on the cardiac monitor to be beating ineffectively (a condition known as ventricular fibrillation), electricity may be applied to the
chest using 2 paddles in an attempt to defibrillate the heart. This procedure may be tried up to 3 times at first, and then occasionally as the person's temperature begins to climb.

- A tube may be placed through the nose into the stomach, and a catheter inserted into the bladder to monitor urine output. An intravenous line will be started, and warmed fluids will be given to treat the dehydration commonly seen in people with hypothermia.
- During this time, the process of rewarming is begun. There are 3 categories of rewarming:
  - Passive external rewarming (PER): This method is ideal for mild hypothermia. In order to be effective, the person must be able to generate enough heat to maintain a good rate of spontaneous rewarming. The victim is placed in a suitably warm environment and covered with insulation. Core temperature is expected to increase a few degrees per hour with this method. At a core temperature below 86°F (30°C), spontaneous shivering is lost. The person has no ability to increase his or her own temperature, and PER is ineffective.
  - Active external rewarming (AER) is a controversial technique in which heat is applied to the skin. Although common sense would suggest that this would be an effective method of rewarming, it has complications. When applied to the entire body, the warmth causes the brain to dilate the blood vessels in the arms and legs from their highly narrowed state. This action can bring cold blood that was previously trapped in the arms and legs back to the core of the body and actually lower its temperature. This same blood also carries with it a large amount of toxins, including acids, which flood the core and cause a dangerous acidosis. For these reasons and others, if AER is employed, it is directed over the trunk of the body only.
  - Active core rewarming (ACR) is the most effective way to rapidly increase core temperature. It avoids many of the dangers associated with external rewarming. ACR is used when the person's heart is unstable, when body temperature is below 89.9°F (32.2°C), and when the person is rewarming too slowly or not at all or in cases of secondary hypothermia. ACR may be performed in a variety of ways.
    - Airway: Warmed, humidified air is given either through the breathing tube or a closely fitted oxygen mask.
    - Peritoneal dialysis: Warmed fluid is placed into the abdomen through an incision and later removed. This cycle is repeated every 20-30 minutes. The major benefit here is that the liver may be quickly rewarmed and thus able to clear the body of toxins.
- Heated irrigation: Tubes may be placed between the ribs, and heated water applied over the lungs and heart. Its effects are questionable.
- Diathermy: This is a new method in which ultrasound and low-frequency microwave radiation is employed to deliver heat to deeper tissues.
- Extracorporeal: Employing one of a variety of methods, blood is circulated from the person's body through a warmer and then back into the bloodstream. This is the most rapid means currently available.


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