

Hypothermia

Signs, Symptoms, and Treatment

As you know, hypothermia is a temperature related disorder.

The body can self-compensate for small upward or downward variations in temperature through the activation of a built-in thermoregulatory system, controlled by temperature sensors in the skin.

The response to an upward variation in body temperature is the initiation of perspiration, which moves moisture from body tissues to the body surface. When the moisture reaches the surface it evaporates, carrying with it a quantity of heat. A person becomes thirsty when exposed to a hot environment for a period of time since fluids lost due to perspiration must be replaced.

The response to a downward variation in body temperature is shivering, which is the body's attempt to generate heat. Shivering is an involuntary contraction and expansion of muscle tissue occurring on a large scale, which creates heat through friction.

Hypothermia is defined as a core temperature of less than 95 degrees F or 35 degrees C. Your normal core body temperature is usually right around 98.6 F or 37 C. In hypothermia, your body fails to maintain a normal temperature.

Factors contributing to hypothermia include age, health, nutrition, body size, exhaustion, exposure, duration of exposure, wind, temperature, wetness, medication and intoxicants. These factors may decrease heat production, increase heat loss, or inhibit thermostability.

The healthy individual's compensatory responses to heat loss via conduction, convection, radiation, evaporation and respiration may be overwhelmed by exposure. Medications may interfere with thermoregulation. Acute or chronic central nervous system processes may decrease the efficiency of thermoregulation. Hypothermia usually occurs gradually. Often, people aren't aware that they need help much less medical attention.

Common signs to look for are **shivering**, which is your body's attempt to generate heat through muscle activity, and the "**-umbles**"

- Mumbles
- Fumbles
- Grumbles
- Stumbles

These behaviors may be a result of changes in consciousness and motor coordination caused by hypothermia. Other hypothermia symptoms may include:

- Slurred speech
- Abnormally slow rate of breathing
- Cold, pale skin
- Fatigue, lethargy or apathy

The severity of hypothermia can vary, depending on how low your core body temperature goes. Severe hypothermia eventually leads to cardiac and respiratory failure, then death.

Impending Hypothermia:

Due to physiological, medical, environmental, or other factors the person's core temperature has decreased to 36 C. The person will increase activity in an attempt to warm up. The skin may become pale, numb and waxy. Muscles become tense; shivering may begin, but can be overcome by activity. Fatigue and signs of weakness begin to show.

Mild Hypothermia:

The person has now become a victim of hypothermia. The core temperature has dropped to 35-34 C. Uncontrolled, intense shivering begins. The victim is still alert and able to help self, however movements become less coordinated and the coldness is creating some pain and discomfort.

Moderate Hypothermia:

The victim's core temperature has now dropped to 33-31 C. Shivering slows or stops, muscles begin to stiffen and mental confusion and apathy sets in. Speech becomes slow, vague and slurred, breathing becomes slower and shallow, and drowsiness and strange behavior may occur.

Severe Hypothermia:

Core temperature is now below 31 C. Skin is cold, may be bluish- gray in color, eyes may be dilated. Victim is very weak, displays a marked lack of coordination, slurred speech, appears exhausted, may appear to be drunk, denies problem and may resist help. There is a gradual loss of consciousness. There may be little or no apparent breathing, victim may be very rigid, unconscious, and may appear dead.

Treatment of hypothermia should be approached with knowledge and care.

What to do

- **Move the person out of the cold.** Preventing additional heat loss is crucial. If you're unable to move the person out of the cold, shield the person from the cold and wind as best you can.
- **Remove wet clothing.** If the person is wearing wet clothing, remove it and replace it with a dry covering. Cover the person's head. Try not to move the person too much. Cut away clothing if you need to.
- **Insulate the person's body from the cold ground.** Lay the person faceup on a blanket or other warm surface.
- **Monitor breathing.** A person with severe hypothermia may appear unconscious, with no apparent signs of a pulse or breathing. If the person's breathing has stopped or

appears dangerously low or shallow, begin cardiopulmonary resuscitation (CPR) immediately, if you're trained.

- **Share body heat.** To warm the person's body, remove your clothing and lie next to the person, making skin-to-skin contact. Then cover both of your bodies with a blanket.
- **Provide warm beverages.** If the affected person is alert and is able to swallow, have the person drink a warm, nonalcoholic beverage to help warm the body.

What not to do

- **Don't apply direct heat.** Don't use hot water, a heating pad or a heating lamp to warm the person. Instead, apply warm compresses to the neck, chest wall and groin. Don't attempt to warm the arms and legs. Heat applied to the arms and legs forces cold blood back toward the heart, lungs and brain, causing the core body temperature to drop. This can be fatal.
- **Don't massage or rub the person.** Handle people with hypothermia gently because they're at risk of cardiac arrest.
- **Don't provide alcoholic beverages.** Alcohol lowers the body's ability to retain heat.

One may cause more harm than good by using the wrong treatment. If one can not distinguish the level of hypothermia through visible signs and symptoms, then he should assume severe hypothermia.

Recent clinical research studies have concluded that the safest and most effective method of treating hypothermia is through inhalation rewarming. The necessary equipment for providing inhalation rewarming therapy in the field is now readily available. However, this equipment may not be available when it is needed and people who may end up in the position of having to provide treatment must know the alternative methods which have been described here.

Always remember, gentle handling, insulation, no alcohol, coffee or tea, and don't try to rewarm a patient in a hurry. Any methods which will rewarm a patient in a hurry in the field will likely cause further complications, if not death.

The signs and symptoms of the person suffering from exposure to the cold are the strongest indicators of hypothermia. Seek immediate medical care for any person who has been exposed to cold air or water and who is shivering, appears disoriented, and shows a lack of coordination, has cold and pale skin, appears tired, and is slurring speech. Try to keep the person warm and dry, preferably indoors or at least out of the wind, until help arrives.