

Exercising in Cold Environments

HYPOTHERMIA

If the body's core temperature drops below normal, its ability to regulate its temperature can become impaired or lost. This condition is called hypothermia. It develops because the body cannot produce heat as fast as it is losing it. This can lead to death. The chance of a soldier becoming hypothermic is a major threat any time he is exposed to the cold.

Some symptoms of hypothermia are shivering, loss of judgment, slurred speech, drowsiness, and muscle weakness.

During exercise in the cold, people usually produce enough heat to maintain normal body temperature. As they get fatigued, however, they slow down and their bodies produce less heat. Also, people often overdress for exercise in the cold. This makes the body sweat. The sweat dampens the clothing next to the skin making it a good conductor of heat. The combination of decreased heat production and increased heat loss can cause a rapid onset of hypothermia.

Some guidelines for dressing for cold weather exercise are shown below:

GUIDELINES FOR DRESSING FOR EXERCISE IN THE COLD

<p>Clothing for cold weather should protect, insulate, and ventilate.</p> <ul style="list-style-type: none">• Protect by covering as large an area of the body as possible• Insulation will occur by trapping air which has been warmed by the body and holding it near the skin.• Ventilate by allowing a two way exchange of air through the various layers of clothing. <p>Clothing should leave your body slightly cool rather than hot.</p> <p>Clothing should also be loose enough to allow movement.</p> <p>Clothing soaked with perspiration should be removed if reasonably possible.</p>	<p>40% heat loss is through the head and neck when uncovered.</p> <p>LIGHTWEIGHT</p> <p>WARM-UPS</p> <p>(not waterproof)</p> <p>FEET SHOULD</p> <p>BE KEPT DRY</p>
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FROSTBITE

Factors which lead to frostbite are cold temperatures combined with windy conditions. The wind has a great cooling effect because it causes rapid convective heat transfer from the body. For a given temperature, the higher the wind speed, the greater the cooling effect. The figure below shows how the wind can affect cooling by providing information on windchill factors.

A person's movement through the air creates an effect similar to that caused by wind. Riding a bicycle at 15 mph is the same as standing in a 15-mph wind. If, in addition, there is a 5-mph headwind, the overall effect is equivalent to a 20-mph wind. Therefore, an exercising soldier must be very cautious to avoid getting frostbite. Covering exposed parts of the body will substantially reduce the risks.



Wind Chill Chart

