



STATE SAFETY OFFICE
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SAFETY MESSAGE 21-02

February is Cold Weather Safety Awareness

It is that time of the year again when the days get shorter and temperatures get colder. Leaders as well as Soldiers need to start thinking about preventing cold weather injuries. The Army Public Health Center reported there were 205 Army cold weather injuries in fiscal 2019 (October 2018 – March 2019), according to data from the Defense Health Agency's Weather-Related Injury Repository. Are you prepared?

The typical individual who suffers a cold weather injury is usually male; E-4 or below with less than 18 months in service; about 20 years old; from a warm climate; uses tobacco, alcohol and/or medications; and neglects proper foot care. However, anyone can become a cold weather casualty. Training Circular 4-02.3 states every Soldier will protect against "cold injury in cold climates by wearing proper cold-weather clothing and frequently changing socks to keep feet dry, by careful handling of gasoline-type liquids and by avoiding contact between skin and cold metal."

Cold weather injuries include, hypothermia, frostbite, nonfreezing cold injuries (chilblains and immersion/trench foot), and injuries related to cold exposure (dehydration, sunburn, carbon monoxide poisoning, snow blindness, and slips, trips and falls). There are several factors that influence these injuries, including:

- A prior cold weather injury, which increases a Soldier's risk to suffer another one; medical conditions such as anemia, diabetes, sickle cell disease, hypotension (low blood pressure) and any other disease of the blood vessels, which can decrease blood flow to the extremities; and some medications impair blood vessel constriction and the body's ability to conserve heat. Soldiers should alert their leaders and battle buddies about prior cold weather injuries, medical conditions and medications that make them susceptible to a cold injury.
- Alcohol may make you feel warm, but it causes the skin's blood vessels to dilate, resulting in an increase of heat loss. It also impairs judgment, making it

difficult to detect a cold injury. Alcohol and caffeine increase urination and the risk of dehydration.

- Nicotine use (smoking or chewing) constricts the blood vessels, leading to less blood flow to the extremities (hands and feet) and increasing the risk of frostbite.
- Vigorous activity or exercise leads to sweating, wet clothing and heat loss. Remove or loosen clothing as needed to prevent sweating. A low heat production from underactivity can lower the body's core temperature. Exercise the large muscle groups, toes, feet, fingers and hands and continue to move.
- Cold weather clothing is designed to reduce heat loss to the environment and protect against hypothermia. Tight-fitting clothing reduces insulation, restricts movement and leads to heat loss. When dressing, consider these tips:
 - Multiple layers of clothing allow air to be trapped to provide insulation. This allows Soldiers to remove layers as needed based on their activity level and environmental conditions. The inner most layer that is in contact with the skin must have wicking properties, allowing water vapor to be transmitted to the outer layers for evaporation. Wet clothing will reduce the insulation provided by the layers of clothing. Choose clothing made of polypropylene, fleece, a Gore-Tex shell or other equivalent synthetic materials.
 - Protect the feet by keeping boots and socks clean and dry and change them out if they become wet.
 - Protect the hands by wearing gloves or mittens with the appropriate inserts/liners. Avoid contacting snow, fuel or bare metal with the hands. Mittens provide a greater protection from cold injuries but reduce dexterity.
 - Be sure to wear a cap. The head can account for up to 50 percent of the body's total heat loss (TB MED 508).
 - Use the acronym COLD: Keep it Clean; avoid Overheating; wear clothing Loose and in Layers; and keep Dry.
- Dehydration limits a Soldier's ability to sustain physical activity and their body's ability to balance heat production and loss. The cold may decrease sensitivity to thirst. When adding strenuous activity, this increases the risk of dehydration. Drink water or warm liquids for hydration and monitor the color of urine (a lighter color indicates good hydration).

- Inadequate nutrition can cause low blood sugar (hypoglycemia), impairing shivering and the body's ability to generate heat. It also limits a Soldier's ability to maintain physical activity and generate heat. Do not skip meals.

Other injuries related to cold weather exposure, include:

- Carbon monoxide poisoning is the result of being exposed to engine exhaust and stoves and heaters with inadequate ventilation in an enclosed space. Ensure tents have adequate ventilation and use only heaters that are approved for indoors. Do not remain in an idling vehicle for long periods and never sleep in an idling vehicle.
- Snow blindness is caused by not wearing eye protection when exposed to ultraviolet (UV) radiation. This type of injury is related to the intensity of the sun, not the air temperature. Snow blindness can degrade a Soldier's performance due to blurred vision, pain and a gritty feeling, tearing, and a headache. Snow blindness can be prevented with the use of sunglasses or goggles that block more than 90 percent of UV radiation.
- Sunburn will increase heat loss and make a Soldier more susceptible to hypothermia. Sunburn is related to the intensity of the sun and not the ambient temperature. Use an appropriate sunblock with at least a 15 sun protection factor (SPF), ensuring it blocks both UVA and UVB rays.
- Slips, trips and falls on ice and snow cause fractures, sprains and strains of the lower extremities, wrists and ankles. These can be prevented with the use of shoes with good traction.

Fortunately, cold weather injuries are preventable. It is the responsibility of every Soldier to know the risk factors and use that information to mitigate an injury. They should also notify their leaders and battle buddies of any of these risk factors for a cold weather injury. In turn, leaders must know their Soldiers who are at an increased risk due to medical conditions, medications or a prior cold weather injury.

FYI

For more information on preventing cold weather injuries, see:

- TB MED 508, Prevention and Management of Cold Weather Injuries, https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/tbmed508.pdf
- TC 21-3, Soldier's Handbook for Individual Operations and Survival in Cold Weather Areas, https://armypubs.army.mil/epubs/DR_pubs/DR_b/pdf/web/tc21_3.pdf.

- TC 4-02.3, Field Hygiene and Sanitation, https://armypubs.army.mil/epubs/DR_pubs/DR_a/pdf/web/tc4_02x3.pdf.
- The Army Public Health Center's Cold Weather Casualties and Injuries webpage, <https://phc.amedd.army.mil/topics/discond/cip/Pages/Cold-Weather-Casualties-and-Injuries.aspx>.

To find previously published Safety Messages go to our NYARNG Safety Website:

<http://dmna.ny.gov/safety/>

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