	Heat & Cold Illness Prevention				
Control number:	HSE-P-19	Revision date:	8/15/2024	Rev #:	0
Approved by:	Derrick Landry	Revised by:	Madison Myers	MOC#:	N/A

PURPOSE

The purpose of this program is to raise employee awareness regarding heat & cold illness symptoms, ways to prevent illness, and what to do if symptoms occur.

1.0 HEAT ILLNESS

- A. Heat illness is a serious medical condition resulting from the body's inability to cope with a particular heat load, which can include heat cramps, heat exhaustion, and heat stroke. Supervisor must ensure that physical and personal factors that contribute to heat related illness are taken into consideration as well as design work procedures to prevent heat illness before performing a work task. The most common physical factors that can contribute to heat related illness are type of work, level of physical activity and duration, and clothing color, weight and breathability. The most common personal factors that can contribute to heat related illness are age, weight/fitness, drug/alcohol use, and prior heat-related illness.
- B. Supervisors must also ensure environmental factors that contribute to heat related illness are taken into consideration as well as implement specific control measures before assigning a task where there is the possibility of a heat-related illness occurring. The most common environmental factors are air temperature, humidity, radiant heat sources and air circulation.

2.0 HEAT CRAMPS

- A. Heat cramps are muscle spasms which usually affect the arms, legs, or stomach. Frequently they don't occur until sometime later after work, at night, or when relaxing. Heat cramps are caused by heavy sweating, especially when water is replaced, but not salt or potassium.
- B. Although heat cramps can be quite painful, they usually don't result in permanent damage. To prevent them, drink electrolyte solutions such as Gatorade during the day and try eating more fruits like bananas.

3.0 HEAT EXHAUSTION

- A. Heat exhaustion is more serious than heat cramps. In heat exhaustion, the surface blood vessels and capillaries, which originally enlarged to cool the blood, collapse from loss of body fluids and necessary minerals. This happens when you don't drink enough fluids to replace what you're sweating away.



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- B. The symptoms of heat exhaustion include: headache, heavy sweating, intense thirst, dizziness, fatigue, loss of coordination, nausea, impaired judgment, loss of appetite, hyperventilation, tingling in hands or feet, anxiety, cool moist skin, weak and rapid pulse (120-200), and low to normal blood pressure.
- C. Somebody suffering these symptoms should be moved to a cool location such as a shaded area or air-conditioned building. Have them lie down with their feet slightly elevated. Loosen their clothing, apply cool, wet clothes or fan them. Have them drink water or electrolyte fluids.

4.0 HEAT STROKE

- A. Heat stroke is a life-threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt, and the victim's body temperature rises to deadly levels. A heat stroke victim may first suffer heat cramps and/or the heat exhaustion before progressing into the heat stroke stage, but this is not always the case. It should be noted that, on the job, heat stroke is sometimes mistaken for heart attack. It is therefore very important to be able to recognize the signs and symptoms of heat stroke and to check for them anytime an employee collapses while working in a hot environment.
- B. The early symptoms of heat stroke include a high body temperature (103 degrees F); a distinct absence of sweating (usually); hot red or flushed dry skin; rapid pulse; difficulty breathing; constricted pupils; any/all the signs or symptoms of heat exhaustion such as dizziness, headache, nausea, vomiting, or confusion, but more severe; bizarre behavior; and high blood pressure. Advanced symptoms may be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108 degrees F.
- C. It is vital to lower a heat stroke victim's body temperature. Seconds count. Pour water on them, fan them, or apply cold packs. Seek emergency medical attention as soon as possible.

5.0 COLD WEATHER-RELATED ILLNESSES & SYMPTOMS

- A. Hypothermia occurs when body heat is lost faster than it can be replaced. When the core body temperature drops below the normal 98.6° F to around 95° F, the onset of symptoms normally begins. The person may begin to shiver and stomp their feet in order to generate heat. Workers may lose coordination, have slurred speech, and fumble with items in the hand. The skin will likely be pale and cold.
- B. Frostbite occurs when the skin actually freezes and loses water. In severe cases, amputation of the frostbitten area may be required. While frostbite usually occurs when the

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temperatures are 30° Fahrenheit or lower, wind chill factors can allow frostbite to occur in above freezing temperatures. Frostbite typically affects the extremities, particularly the feet and hands. The affected body part will be cold, tingling, stinging or aching followed by numbness. Skin color turns red, then purple, then white, and is cold to the touch.

There may be blisters in severe cases. Trench Foot or immersion foot is caused by having feet immersed in cold water at temperatures above freezing for long periods of time. It is similar to frostbite, but considered less severe. Symptoms usually consist of tingling, itching or burning sensation. Blisters may be present.

- C. Any job task that exposes an employee to temperatures below 30° Fahrenheit places the employee at risk for cold exposure or hypothermia. To reduce and/or eliminate the possibility of hypothermia, an onsite risk assessment will be conducted as part of the Job Safety Analysis to identify, evaluate and address employee exposures based on job classification.
- D. If hypothermia is suspected, get the victim professional medical care immediately, and follow these methods to maintain warmth:
 - Get victim out of the wind and rain.
 - Remove wet clothing and replace it with dry or wool clothing.
 - Use body heat to warm the victim. Get inside a sleeping bag with the victim or wrap yourself in a blanket with them. If several people are with you, have everyone huddle around the victim.
 - If the victim is conscious, have them drink warm fluids such as sweetened tea, broth or juice, and have them eat quick-energy foods such as candy.
 - Do not allow victim to drink alcoholic beverages in any circumstance.

6.0 COLD STRESS PREVENTION

- A. Protective Clothing is the most important way to avoid cold stress. The type of fabric also makes a difference. Cotton loses its insulation value when it becomes wet. Wool, silk and most synthetics, on the other hand, retain their insulation even when wet. The following are recommendations for working in cold environments:
 - Wear at least three layers of clothing. An inner layer of wool, silk or synthetic to wick moisture away from the body. A middle layer of wool or synthetic to provide insulation even when wet. An outer wind and rain protection layer that allows some ventilation to prevent overheating.
 - Wear a hat or hood. Up to 40% of body heat can be lost when the head is left exposed.
 - Wear insulated boots or footwear.
 - Keep a change of dry clothing available in case work clothes become wet.
 - With the exception of the wicking layer do not wear tight clothing. Loose clothing allows better ventilation of heat away from the body.

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- Do not underestimate the wetting effects of perspiration. Oftentimes wicking and venting of the body's sweat and heat are more important than protecting from rain or snow.
- Note: Peak NDT Solutions shall implement a "Buddy System" during all cold weather operations to ensure that no employee is working alone in cold work environments.

B. Additional preventive measures shall include:

- Taking breaks out of the cold,
- Watching for signs of cold stress,
- Scheduling heavy work during the warmer parts of the day,
- Drinking plenty of liquids while avoiding caffeine and alcohol,
- Consuming warm, high calorie food such as pasta to maintain energy reserves

7.0 MANAGEMENT & SUPERVISOR RESPONSIBILITIES

- A. Management & Supervisory personnel shall ensure that affected employees and new hires are provided with an appropriate period of acclimatization when exposed to heat stress environments. Additionally, salt replacement methods such as tablets & electrolyte drinks shall be utilized for employees exposed to hot climates that have the potential to cause heat related illnesses.
- B. Peak NDT Solutions shall provide Employees with access to potable drinking water. Where it is not plumbed or otherwise continuously supplied, Peak NDT Solutions shall be provided bottled water in sufficient quantities throughout the work shift.
- C. Peak NDT Solutions shall provide access to an area with shade that is either open to the air or provided with ventilation for any employee suffering from heat illness or believes that they need a recovery period. Such access to shade will be permitted at all times.
- D. In cold weather conditions, regularly used walkways and travel ways shall be sanded, salted, or cleared of snow and ice as soon as practicable.
- E. Peak NDT Solutions Onsite Supervisor shall inform employees of the dangers and destructive potential caused by unstable snow buildup, sharp icicles, and ice dams and know how to prevent accidents caused by them. Additionally, the Onsite Supervisor shall regularly conduct inspections on cold weather supplies to ensure that supplies are always in stock.
- F. If hypothermia is suspected, Peak NDT Solutions will provide the employee with professional medical care immediately, and will follow these methods to maintain warmth:
- Remove the employee from any wind or rain.
 - Remove wet clothing and replace it with dry or wool clothing.
 - Have the employee drink warm fluids such as sweetened tea and have them eat quick-energy foods such as candy.

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8.0 TRAINING

- A. All Employees exposed to cold shall receive initial and annual training regarding Peak NDT Solutions "Heat & Cold Illness Prevention" procedures. Prior to being assigned a Supervisory role, Supervisors shall receive additional training on Peak NDT Solutions prevention of heat & cold related illnesses, procedures to follow when employee exhibit symptoms consistent with heat & cold illness, and emergency response procedures when working in heat or cold related environments.
- B. Additionally, all employees shall be training on the hazards of working in Heat & Cold environments to include the following:
- Health effects,
 - The buddy system,
 - Hazard of Cold Stress,
 - Proper hydration methods,
 - Required protective clothing,
 - Shading & warming shelters,
 - Proper rewarming procedures,
 - Vehicle breakdown procedures,
 - Proper use of warming shelters,
 - Health effects of heat & cold exposure,
 - Recognition of frostbite & hypothermia,
 - Proper First-Aid for heat & cold weather injuries & illness,
 - Proper eating and drinking habits for working in the heat & cold, &
 - Proper first aid treatment for heat & cold induced injuries or illnesses.

REVISION INFORMATION

This is applicable to changes made to the current version of the preceding document.

Revision Number	Description