Cold Stress Hazards Meeting Kit

WHAT’S AT STAKE

Cold Stress Safety Talk

Cold weather and environments pose many hazards to employees who work in these conditions. A cold environment forces the body to work harder to maintain its temperature.

WHAT’ S THE DANGER

HYPOTHERMIA

When exposed to cold temperatures, your body begins to lose heat faster than it can be produced. Prolonged exposure to cold will eventually use up your body’s stored energy. The result is hypothermia, or abnormally low body temperature. A body temperature that is too low affects the brain, making the victim unable to think clearly or move well. This makes hypothermia particularly dangerous because a person may not know it is happening and will not be able to do anything about it.

Symptoms

Symptoms of hypothermia can vary depending on how long you have been exposed to the cold temperatures.

Early Symptoms

- Shivering
- Fatigue
- Loss of coordination
- Confusion and disorientation

Late Symptoms

- No shivering
- Blue skin
- Dilated pupils
- Slowed pulse and breathing

- Loss of consciousness

FROSTBITE

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in the affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage body tissues, and severe cases can lead to amputation. In extremely cold temperatures, the risk of frostbite is increased in workers with reduced blood circulation and among workers who are not dressed properly.

Symptoms of frostbite include: Reduced blood flow to hands and feet (fingers or toes can freeze), Numbness, Tingling or stinging, Aching, Bluish or pail, waxy skin.

Trench Foot

Trench foot, also known as **immersion foot**, is an injury of the feet resulting from prolonged exposure to wet and cold conditions. Trench foot can occur at temperatures as high as 60 degrees F if the feet are constantly wet. Injury occurs because wet feet lose heat 25-times faster than dry feet. Therefore, to prevent heat loss, the body constricts blood vessels to shut down circulation in the feet. Skin tissue begins to die because of lack of oxygen and nutrients and due to the buildup of toxic products.

Symptoms of trench foot include: Reddening of the skin, Numbness, Leg cramps, Swelling, Tingling pain, Blisters or ulcers, bleeding under the skin, Gangrene (the foot may turn dark purple, blue, or gray).

HOW TO PROTECT YOURSELF

BODY REACTS TO COLD

In a cold environment, most of the body’s energy is used to keep the internal core temperature warm. Over time, the body will begin to shift blood flow from the extremities (hands, feet, arms, and legs) and outer skin to the core (chest and abdomen). This shift allows the exposed skin and the extremities to cool rapidly and increases the risk of frostbite and hypothermia. Combine this scenario with exposure to a wet environment, and trench foot may also be a problem.

EMPLOYEE PREVENTION

Workers should avoid exposure to extremely cold temperatures when possible. When cold environments or temperatures cannot be avoided, workers should follow these recommendations to protect themselves from cold stress:

- Wear appropriate clothing.
    - Wear several layers of loose clothing. Layering provides better insulation.
    - Tight clothing reduces blood circulation. Warm blood needs to be circulated to the extremities.
    - When choosing clothing, be aware that some clothing may restrict movement resulting in a hazardous situation.
- Make sure to protect the ears, face, hands and feet in extremely cold

weather.
    - Boots should be waterproof and insulated.
    - Wear a hat; it will keep your whole body warmer. (Hats reduce the amount of body heat that escapes from your head.)
- Move into warm locations during work breaks; limit the amount of time outside on extremely cold days.
- Carry cold weather gear, such as extra socks, gloves, hats, jacket, blankets, a change of clothes and a thermos of hot liquid.
- Include a thermometer and chemical hot packs in your first aid kit.
- Avoid touching cold metal surfaces with bare skin.
- Monitor your physical condition and that of your coworkers.

FINAL WORD

Cold stress occurs by driving down the skin temperature and eventually the internal body temperature (core temperature). This may lead to serious health problems, and may cause tissue damage, and possibly death.