This issue of Health and Safety News is dedicated to providing information related to the winter season. Winter can take a tremendous toll on our bodies, our homes, and our vehicles. Therefore, the topics found in this month’s newsletter will shed light on what needs to be done to protect ourselves and those things on which we rely on a daily basis. For further details about any topic presented, please visit the CDC’s website (http://www.cdc.gov/). Also, in some of the sections, there will be words or phrases highlighted in blue and to find out more about them, just right click and select Open Hyperlink.

Be Prepared to Stay Safe and Healthy During Winter (http://www.cdc.gov/Features/WinterWeather/)

Although winter comes as no surprise, many of us are not ready for its arrival. If you are prepared for the hazards of winter, you will be more likely to stay safe and healthy when temperatures start to fall.

Many people prefer to remain indoors in the winter, but staying inside is no guarantee of safety. Take these steps to keep your home safe and warm during the winter months.

- Winterize your home.
• Install weather stripping, insulation, and storm windows.
• Insulate water lines that run along exterior walls.
• Clean out gutters and repair roof leaks.

• Check your heating systems.
  • Have your heating system serviced professionally to make sure that it is clean, working properly and ventilated to the outside.
  • Inspect and clean fireplaces and chimneys.
  • Install a smoke detector. Test batteries monthly.
  • Have a safe alternate heating source and alternate fuels available.
  • Prevent carbon monoxide (CO) emergencies.
    • Install a CO detector to alert you of the presence of the deadly, odorless, colorless gas.
    • Learn symptoms of CO poisoning: headaches, nausea, and disorientation.
    • Keep grills and generators out of the house and garage. Position generators at least 20 feet from the house.

Be prepared for weather-related emergencies, including power outages.

• Stock food that needs no cooking or refrigeration and water stored in clean containers.
• Keep an up-to-date emergency kit, including:
  • battery-operated devices, such as a flashlight, a National Oceanic and Atmospheric Administration (NOAA) Weather Radio, and lamps;
  • extra batteries;
  • first-aid kit and extra medicine;
  • baby items; and
  • cat litter or sand for icy walkways.

Many people spend time outdoors in the winter working, traveling, or enjoying winter sports. Outdoor activities can expose you to several safety hazards, but you can take these steps to prepare for them:

• Wear appropriate outdoor clothing: layers of light, warm clothing; mittens; hats; scarves; and waterproof boots.
• Sprinkle cat litter or sand on icy patches.
• Learn safety precautions to follow when outdoors.
  • Be aware of the wind chill factor.
  • Work slowly when doing outside chores.
• Take a buddy and an emergency kit when you are participating in outdoor recreation.
• Avoid traveling when the weather service has issued advisories.
• If you must travel, inform a friend or relative of your proposed route and expected time of arrival.
• Carry a cell phone.

• Prepare your car for winter.
  o Service the radiator and maintain antifreeze level; check tire tread or, if necessary, replace tires with all-weather or snow tires
  o Keep gas tank full to avoid ice in the tank and fuel lines.
  o Use a wintertime formula in your windshield washer.
  o Keep a winter emergency kit in your car in case you become stranded. Include
    ▪ blankets;
    ▪ food and water;
    ▪ booster cables, flares, tire pump, and a bag of sand or cat litter (for traction);
    ▪ compass and maps;
    ▪ flashlight, battery-powered radio, and extra batteries;
    ▪ first-aid kit; and
    ▪ plastic bags (for sanitation).
  o Learn safety rules to follow in case you become stranded in your car.
    ▪ Stay with your car unless safety is no more than 100 yards away, but continue to move arms and legs.
    ▪ Stay visible by putting bright cloth on the antenna, turning on the inside overhead light (when engine is running), and raising the hood when snow stops falling.
    ▪ Run the engine and heater only 10 minutes every hour.
    ▪ Keep a downwind window open.
    ▪ Make sure the tailpipe is not blocked.

Above all, be prepared to check on family and neighbors who are especially at risk from cold weather hazards: young children, older adults, and the chronically ill. If you have pets, bring them inside. If you cannot bring them inside, provide adequate, warm shelter and unfrozen water to drink.

No one can stop the onset of winter. However, if you follow these suggestions, you will be ready for it when it comes.
COLD STRESS (http://www.cdc.gov/niosh/topics/coldstress/)

Overview
Workers who are exposed to extreme cold or work in cold environments may be at risk of cold stress. Extreme cold weather is a dangerous situation that can bring on health emergencies in susceptible people, such as those without shelter, outdoor workers, and those who work in an area that is poorly insulated or without heat. What constitutes cold stress and its effects can vary across different areas of the country. In regions relatively unaccustomed to winter weather, near freezing temperatures are considered factors for "cold stress." Whenever temperatures drop decidedly below normal and as wind speed increases, heat can more rapidly leave your body. These weather-related conditions may lead to serious health problems.

Types of Cold Stress

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

**First Aid**

Take the following steps to treat a worker with hypothermia:

- Alert the supervisor and request medical assistance.
- Move the victim into a warm room or shelter.
- Remove their wet clothing.
- Warm the center of their body first—chest, neck, head, and groin—using an electric blanket, if available; or use skin-to-skin contact under loose, dry layers of blankets, clothing, towels, or sheets.
- Warm beverages may help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person.
- After their body temperature has increased, keep the victim dry and wrapped in a warm blanket, including the head and neck.
- If victim has no pulse, begin cardiopulmonary resuscitation (CPR).

**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

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

First Aid

Workers suffering from frostbite should:

- Get into a warm room as soon as possible.
- Unless absolutely necessary, do not walk on frostbitten feet or toes-this increases the damage.
- Immerse the affected area in warm-not hot-water (the temperature should be comfortable to the touch for unaffected parts of the body).
- Warm the affected area using body heat; for example, the heat of an armpit can be used to warm frostbitten fingers.
- Do not rub or massage the frostbitten area; doing so may cause more damage.
- Do not use a heating pad, heat lamp, or the heat of a stove, fireplace, or radiator for warming. Affected areas are numb and can be easily burned.

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

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)

First Aid

Workers suffering from trench foot should:
• Remove shoes/boots and wet socks.
• Dry their feet.
• Avoid walking on feet, as this may cause tissue damage.

Chilblains

Chilblains are caused by the repeated exposure of skin to temperatures just above freezing to as high as 60 degrees F. The cold exposure causes damage to the capillary beds (groups of small blood vessels) in the skin. This damage is permanent and the redness and itching will return with additional exposure. The redness and itching typically occurs on cheeks, ears, fingers, and toes.

Symptoms

Symptoms of chilblains include:

• Redness
• Itching
• Possible blistering
• Inflammation
• Possible ulceration in severe cases

First Aid

Workers suffering from chilblains should:

• Avoid scratching
• Slowly warm the skin
• Use corticosteroid creams to relieve itching and swelling
• Keep blisters and ulcers clean and covered

Recommendations for Employers

Employers should take the following steps to protect workers from cold stress:

• Schedule maintenance and repair jobs in cold areas for warmer months.
• Schedule cold jobs for the warmer part of the day.
• Reduce the physical demands of workers.
• Use relief workers or assign extra workers for long, demanding jobs.
• Provide warm liquids to workers.
• Provide warm areas for use during break periods.
• Monitor workers who are at risk of cold stress.
• Provide cold stress training that includes information about:
  o Worker risk
  o Prevention
  o Symptoms
  o The importance of monitoring yourself and coworkers for symptoms
  o Treatment
  o Personal protective equipment

Recommendations for Workers

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.
  o Wear several layers of loose clothing. Layering provides better insulation.
  o Tight clothing reduces blood circulation. Warm blood needs to be circulated to the extremities.
  o 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.
  o Boots should be waterproof and insulated.
  o 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.

CDC Resources

CDC: Extreme Cold - A Prevention Guide to Promote Your Personal Health and Safety [PDF - 3.45 MB]
Information on how to prepare indoors and outdoors for extreme cold.

CDC: Winter Weather

Other Government Resources

Occupational Safety & Health Administration (OSHA): Tips to Protect Workers in Cold Environments
Cold stress hazards, solutions, and controls.

OSHA: Sawmill eTool: Cold Stresses
Information on frostbite and hypothermia.
Cold stress or hypothermia can affect construction workers who are not protected against cold. The cold may result naturally from weather conditions or be created artificially, as in refrigerated environments.

Cold stress factors, safety, and hazards.

This preparedness guide explains the dangers of winter weather and suggests life-saving action you can take. With this information, you can recognize winter weather threats, develop an action plan and be ready when severe winter weather threatens.

American Conference of Governmental Industrial Hygienists: Product Store - Threshold Limit Values and Biological Exposure Indices
Purchase this document

American National Standards Institute - Ergonomics of the Thermal Environment: Medical Supervision of Individuals Exposed to Extreme Hot or Cold Environments
This International Standard provides advice to those concerned with the safety of human exposures to extreme hot or cold thermal environments.
Purchase this document

Alaska Department of Labor and Workforce Development: Labor Standards and Safety - Cold Stress [PDF - 149.34 KB]
Physical agent data sheets on hypothermia and frostbite.

Information on cold stress symptoms and PPE.