ENVIRONMENTAL SAFETY

LIGHTNING SAFETY TIPS

Lightning is dangerous because it is random and unpredictable. Please read, learn, and teach others the following lightning safety tips. Be prepared to act quickly.

IF OUTDOORS: Avoid water. Avoid metal objects such as electric wires, fences, machinery, motors, power tools, railroad tracks, etc. Unsafe places include tents, golf cars, small open-sided rain shelters, or underneath isolated trees. Avoid hilltops, and open spaces. Where possible find shelter in a building or in a fully enclosed metal vehicle such as a car, truck, or a van with the windows completely shut. If lightning is striking nearby, you should:

Avoid direct contact with other people.

Remove all metal objects.

Crouch down, with feet together and hand on knees.

IF INDOORS: Avoid water. Stay way from open doors and windows. Hang up the telephone and take off headsets. Lightning may strike electric and phone lines and induce shocks. Turn off and stay away from appliances, computers.

If a nearby person is injured from lightning, give first aid procedures “if you’re qualified to do so”. An injured person does not carry an electrical charge and can be handled safely. Call 911 immediately.

HEAT STRESS

Overview

Working in the heat puts an extra strain on your body. With some understanding of how the body reacts to heat, you can prevent heat-related disorders.

What are the risk factors?

Age, weight, degree of physical fitness, metabolism, medications, use of alcohol or drugs, and a variety of medical conditions such as hypertension all affect a person’s sensitivity to heat. It is difficult to predict who will be affected by the heat, or when someone will be affected. Air temperature, humidity, direct sun, radiant heat sources, and clothing are all other factors to consider. Another factor is whether you are accustomed to the heat. By gradually being exposed to working in hot conditions, your body develops a greater tolerance for the heat.

Heat disorders:

Fatigue

- Muscles get tired more quickly in the heat
- Less blood available to provide energy for peak performance
- Rest in cooler area
- Gradual adjustment to working in heat

Heat rash

- Body heat is released through sweating
- Rash develops when sweat ducts become plugged
- Wash skin and allow to dry
- If infected, get medical attention
- Prevent by resting in a cool place

Fainting

- Blood accumulates in lower part of body when standing still
- Brain doesn't get adequate blood supply
- Lay in cool area to recover
- Moving around helps blood circulate and helps prevent fainting

Heat cramps

- Muscles develop cramps or spasms from salt imbalances
- Sweating and not replacing fluids can cause cramps.
- Drink about 5 to 7 ounces of fluids every 15 to 20 minutes
- Avoid beverages containing caffeine or alcohol—they promote more fluid loss
- Drink salted liquids or commercially available carbohydrate replacement liquids
- If salt replacement is required, adding a little extra salt to food

Heat exhaustion

- Large amounts of body fluid lost through sweating
- Victim becomes weak or fatigued, giddy, nauseous, and can have a headache
- Person still sweats; the skin is clammy and moist
- Body temperature remains at or near normal.
- In serious cases, the victim may vomit or lose consciousness
- Rest in a cool place and drinking plenty of fluids
- Medical attention may be required.

Heat stroke

- <u>Life threatening condition</u>
- Body's temperature regulatory system fails
- Victim's skin is hot and dry. Body temperature is usually 105° F or higher
- Victim is mentally confused/delirious and can have convulsions or become unconscious

- Immediate treatment by medical professionals can prevent brain damage or death.
- Move victim to cool area
- Soak clothing in water and fan body
- Don't leave victim unattended

How can I protect myself?

- Get accustomed to heat by gradually increasing workload over a period of a few days.
- Be aware of heat disorder symptoms and take rest breaks in a cooler area as needed.
- Drink small amounts of water or other fluids frequently -- about 5 to 7 ounces every 15 to 20 minutes
- Avoid drinks containing caffeine.

Heat Exhaustion & Heat Stroke

Overview

When your body is unable to cool itself through perspiration, serious heat illnesses may occur. The most severe heat-related illnesses are heat exhaustion and heat stroke. If actions are not taken to treat heat exhaustion, the illness could progress to heat stroke and could possibly cause your death.

Two of the most common heat-related illnesses and injuries are heat exhaustion and heat stroke.

Heat exhaustion causes:

- Headaches, dizziness, lightheadedness or mental confusion
- Weakness, mood changes
- Pale, clammy skin
- Nausea
- Decreased and dark colored urine
- Vomiting
- Fainting or passing out

Heat stroke causes:

- Dry, pale skin with no sweating or hot, red skin
- Mood changes or mental confusion
- Seizures, it
- Fainting or passing out

You are at increased risk when you:

- have had a heat-induced illness in the past.
- take certain medications — check with your doctor or pharmacist.
- wear heavy or restrictive PPE like protective suits or respirators.

You can prevent difficulties from heat related illnesses by:

- learning the signs and symptoms of heat-induced illnesses and how to help yourself or a fellow employee who is exhibiting those signs.
- drinking plenty of cool water during hot weather. Avoid caffeine or alcoholic beverages, as they make the body lose water and increase the risk for heat illnesses.
- wearing light, loose-fitting, breathable clothing (such as clothing made from cotton). Take short, frequent breaks in areas out of or away from the heat.
- using the buddy system, so that one person can check on the other.

Controlling Heat-related Illnesses:

Things you can do to prevent difficulties from heat related illnesses and injuries:

- Learn the signs and symptoms of heat-induced illnesses and what you can do to help yourself or a fellow employee.
- Use the buddy system (work in pairs) when working in hot conditions.
- Drink plenty of cool water (one small cup every 15-20 minutes).
- Wear light, loose-fitting, breathable (like cotton) clothing.
- Avoid eating large meals before working in hot environments.
- Avoid caffeine and alcoholic beverages (these beverages make your body lose water and increase the risk for heat illnesses).

Slowly build up tolerance to the heat and your work activity (usually takes about two weeks).

- Do your heaviest work in the coolest part of the day.
- Take frequent short breaks in cool shaded areas. This allows your body to cool down.

You are at increased risk when you:

- Take certain medications. Check with your doctor, nurse, or pharmacy and ask if any medicines you are taking affect you while working in hot environments.
- Have had a heat-induced illness in the past.
- Wear some personal protective equipment such as respirators or protective suits.

COLD STRESS

Overview

Even though we are in a 'tropical climate', the temperature in Florida can drop to freezing or near freezing levels for a short amount of time. 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

- **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).

Cold Water Immersion

Cold water immersion creates a specific condition known as immersion hypothermia. It develops much more quickly than standard hypothermia because water conducts heat away from the body 25 times faster than air. Typically people in temperate climates don't consider themselves at risk from hypothermia in the water, but hypothermia can occur in any water temperature below 70°F. Survival times can be lengthened by wearing proper clothing (wool and synthetics and not cotton), using a personal flotation device (PFD, life vest, immersion suit, dry suit), and having a means of both signaling rescuers (strobe lights, personal locator beacon, whistles, flares, waterproof radio) and having a means of being retrieved from the water. Below you will find links with information about cold water survival and cold water rescue.

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

- 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

- 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.

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.