Module Title: Cold Weather Exposure

Objective: To recognize the symptoms and to know the results of overexposure to the cold, and to take precautions to prevent overexposure.

Trainer's Note: There are many times during the cold months of the year that work outside still needs to be done. Discuss with your employees the dangers overexposure to the cold presents, and how to prevent cold weather ailments.

Background

Exposure to cold can lead to serious illness, so it is important to be aware of the temperature and how to protect yourself against it. Cold exposure can occur in weather that is not freezing. Wind, humidity and moisture remove body heat, which can eventually lead to hypothermia. The cold primarily affects the body's extremities. Hands and feet are further away the body core and have less blood flow. However, man can deal with low temperatures much better than high temperatures by just adding clothing.

Cold exposure prevention:

- Wear several layers of loose clothing. Layering provides better insulation. Layers can also be removed if you become too hot.
- 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.
- Boots should be waterproof and insulated.
- By wearing a hat, you will keep your whole body warmer. It reduces the amount of body heat that escapes from your head.
- Make sure to protect the ears, face, hands and feet in extremely cold weather.
- Move into warm locations periodically. 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.
- When working, avoid touching cold metal surfaces with bare skin.

Cold Weather Injuries

Frostnip is the freezing of the top layers of skin tissue and is normally reversible. It mostly affects the cheeks, earlobes, fingers, and toes.

Symptoms include:

- Numbness.
- Top layer of skin feeling hard and rubbery, but deeper tissue is soft.
- Skin becomes white and waxy.

Treatment:

- Rewarm the area gently, generally by blowing warm air on it or placing the area against a warm body part.
- The area should not be rubbed as it can damage the effected tissue.

Frostbite is the actual freezing of the tissue and/or body part. Ice crystals form inside the skin that can destroy the tissues, and you could lose skin or part of a finger, toe, or foot, for example. It affects the ears,

nose, fingers and toes most often. Superficial frostbite includes all layers of skin, and deep frostbite can include freezing of muscle and/or bone.

Symptoms include:

- Skin that is white and has a "wooden" feel all the way through.
- Numbness, possible anesthesia.

Treatment:

- Move the person to a warm area. Put affected body parts in warm water (105 - 110 degrees F) until skin becomes flushed. No hotter or additional damage will result.
- After warming, the injured area should be wrapped in sterile gauze, keeping affected fingers and toes separated.
- If you cannot guarantee that the tissue will stay warm, do not rewarm the tissue until it can be kept warm.
- If normal sensations haven't returned within 30 minutes, seek medical attention.

Hypothermia is the general cooling of the body. When the body drops much below the normal temperature of 98.6 degrees Fahrenheit, serious problems can arise. Severe hypothermia can lead to death.

Symptoms of mild hypothermia include:

- Uncontrollable shivering.
- Still able to walk and talk.
- Numbness of hands.
- Unable to complete tasks with hands.

Symptoms of severe hypothermia include:

- Shivering stops.
- Poor muscle coordination, and unable to walk.
- Pulse and respiration rates decrease.
- Irrational/incoherent behavior.

Treatment for mild hypothermia:

- Encourage physical activity to generate muscle heat.
- Give the person hot caffeine-free and alcohol-free drinks.
- Get the person to a warm area and take off any wet clothing.
- Gradually rewarm them by applying hot packs, or water bottles wrapped in hot, wet towels to the groin, head, neck and sides of the chest to help provide a gentle source of heat. Immersing a person in warm water, rewarms them too fast.

Treatment for severe hypothermia:

- Treat a person with severe hypothermia as a medical emergency.
- Let the hospital rewarm the victim. If immediate access to medical facilities is not possible, wrap the person warmly and transport to safety gently. Jostling the person may cause cardiac arrest.
- Remove all wet clothing and place the person in a dry sleeping bag or blankets.
- Once shivering has stopped, the person has lost the ability to generate heat. They need a gentle source of heat, like another human body.
- Apply hot packs to the neck, armpits, side, chest and groin to apply heat. Warm the person's lungs by mouth-to-mouth breathing.
- The extremities should not be rubbed or manipulated.
- Hot drinks are also dangerous as they draw warm blood away from vital organs.

Review the Following Points

- To prevent cold weather ailments dress properly and do not stay out in the extreme cold for extended amounts of time.
- Frostnip is the freezing of the top skin tissue layers, and the affected areas should be rewarmed gently.
- Frostbite is the freezing of all layers of skin, muscles and/or bones. Affected parts should be warmed slowly and seek medical attention.
- Hypothermia is the general cooling of the entire body and can be life threatening.

True or False Answer Key
1. T, 2. T, 3. F, 4. T, 5. T

Cold Weather Exposure Quiz

True or False **Name**_____

1. Several layers of loose clothing should be worn in cold weather.	T	F
2. To avoid cold weather injuries, you should move into warm locations periodically.	T	F
3. Frostnip is the freezing of all layers of skin, muscles and/or bones.	T	F
4. For mild hypothermia, encourage physical activity to generate muscle heat.	T	F
5. The areas affected by cold weather injuries should not be rubbed or manipulated, as this could cause greater damage to the affected area.	T	F