

Disaster Emergency Info



NIOSH Workplace Safety & Health Topic

- [Ebola](#)

[OSHA Winter Storm Response/Recovery Information](#)

While most workers can stay inside during a winter storm, some workers may be required to go into the storm. These may include utility workers; law enforcement personnel; firefighters; emergency medical personnel; federal, state and local government personnel; military personnel; highway personnel; and sanitation workers.

Some of the hazards associated with working in winter storms include:

- Driving accidents due to slippery roadways
- Carbon monoxide poisoning
- Hypothermia and frostbite due to the cold weather exposure
- Exhaustion from strenuous activity
- Dehydration
- Back injuries or heart attack while removing snow
- Slips and falls due to slippery walkways
- Electrocution due to downed power lines or downed objects in contact with power lines
- Burns from fires caused by energized line contact or equipment failure
- Being struck by falling objects such as icicles, tree limbs, and utility poles
- Falls from snow removal on roofs, or while working in aerial lifts or on ladders
- Roof collapse under weight of snow (or melting snow if drains are clogged)
- Lacerations or amputations from unguarded or improperly operated chain saws and power tools, and improperly attempting to clear jams in snow blowers

Driving/Vehicle Hazards

For information about driving safely during winter, visit OSHA's [Safe Winter Driving](#) sheet.

What should I do if a winter storm strands me in my vehicle?

Stay in the vehicle. Do not leave the vehicle to search for assistance unless help is visible within 100 yards. You may become disoriented and lost in blowing and drifting snow. Display a trouble sign by hanging a brightly colored cloth on the radio antenna and raising the hood. Turn on the vehicle's engine for about 10 minutes each hour and run the heat to keep warm. Also, turn on the vehicle's dome light when the vehicle is running as an additional signal. *Beware of carbon monoxide poisoning.* Keep the exhaust pipe clear of snow, and open a downwind window slightly for ventilation.

Watch for signs of frostbite and hypothermia. Do minor exercises to keep up circulation. Clap hands and move arms and legs occasionally. Try not to stay in one position for too long. If more than one

person is in the vehicle, take turns sleeping. For warmth, huddle together. Use newspapers, maps, and even the removable car mats for added insulation. Avoid overexertion since cold weather puts an added strain on the heart. Unaccustomed exercise such as shoveling snow or pushing a vehicle can bring on a heart attack or make other medical conditions worse. Be aware of symptoms of dehydration.

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Frostbite and Hypothermia

What is frostbite?

Frostbite is a severe reaction to cold exposure that causes freezing in the deep layers of skin and tissue. Frostbite can cause permanent damage. It is recognizable by a loss of feeling and a waxy-white or pale appearance in fingers, toes, nose, or ear lobes. For more information, see OSHA's [Cold Stress Quick Card](#), or CDC's publication, [NIOSH Cold Stress Guide](#).

What is hypothermia?

Hypothermia occurs when the body temperature drops to less than 95°F. Symptoms of hypothermia include uncontrollable shivering, slow speech, memory lapses, frequent stumbling, drowsiness, and exhaustion. For more information, see OSHA's [Cold Stress Safety and Health Guide](#), or CDC's publication, [NIOSH Cold Stress Guide](#).

What can be done to avoid frostbite and hypothermia?

- Recognize the environmental and workplace conditions that lead to potential cold-induced illnesses and injuries.
- Learn the signs and symptoms of cold-induced illnesses/injuries and what to do to help those who are affected.
- Train the workforce about cold-induced illnesses and injuries.
- Select proper clothing for cold, wet, and windy conditions.
- Layer clothing to adjust to changing environmental temperatures. Wear a hat and gloves, in addition to underwear that will keep water away from the skin (polypropylene).
- Take frequent short breaks in warm dry shelters to allow the body to warm up.
- Perform work during the warmest part of the day.
- Avoid exhaustion or fatigue because energy is needed to keep muscles warm.
- Use the buddy system (work in pairs).
- Drink warm, sweet beverages (sugar water, sports-type drinks). Avoid drinks with caffeine (coffee, tea, or hot chocolate) or alcohol.
- Eat warm, high-calorie foods like hot pasta dishes.

Who is at increased risk of frostbite and hypothermia?

Victims of hypothermia are often (1) elderly people with inadequate food, clothing, or heating; (2) babies sleeping in cold bedrooms; (3) people who remain outdoors for long periods - the homeless, hikers, hunters, etc.; and (4) people who drink alcohol or use illicit drugs. Victims may also include people with predisposing health conditions such as cardiovascular disease, diabetes, and hypertension, people that take certain medication (check with your healthcare provider and ask if

any medicines you are taking affect you while working in cold environments), and people in poor physical condition or who have a poor diet. For more information, see [A Prevention Guide to Promote Your Personal Health and Safety](#).

How do I treat a person with frostbite or hypothermia?

If frostbite or hypothermia is suspected, begin warming the person slowly and seek immediate medical assistance. Warm the person's trunk first. Use your own body heat to help. Arms and legs should be warmed last because stimulation of the limbs can drive cold blood toward the heart and lead to heart failure. Put person in dry clothing and wrap their entire body in a blanket. Never give a frostbite or hypothermia victim something with caffeine in it (like coffee or tea) or alcohol. Caffeine, a stimulant, can cause the heart to beat faster and hasten the effects the cold has on the body. Alcohol, a depressant, can slow the heart and also hasten the ill effects of cold body temperatures.

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Shoveling Snow

What hazards are associated with activities to shoveling snow?

Shoveling snow can be a strenuous activity, particularly because cold weather can be taxing on the body, and can create the potential for exhaustion, dehydration, back injuries, or heart attacks. In addition to following the tips for avoiding frostbite and hypothermia, such as taking frequent breaks and drinking fluids (while avoiding ones with caffeine or alcohol), there are a variety of other precautions workers can take to avoid injuries while removing snow. Workers should warm-up before the activity, scoop small amounts of snow at a time, push the snow instead of lifting where possible, and use proper form if lifting is necessary: keeping the back straight and lifting with the legs.

Slips and Falls

How do I walk safely on snow and ice?

Where appropriate, clear walking surfaces of snow and ice and use salt or its equivalent. In addition, the following precautions will help reduce the likelihood of any injuries:

- Walking on snow or ice is especially treacherous and wearing proper footwear is essential. A pair of well insulated boots with good rubber treads is a must for walking during or after a winter storm. Keeping a pair of rubber over-shoes with good treads which fit over your street shoes is a good idea during the winter months.
- When walking on an icy or snow-covered walkway, take short steps and walk at a slower pace so you can react quickly to a change in traction.
- When walking on a sidewalk which has not been cleared and you must walk in the street, walk *against* the traffic and as close to the curb as you can.
- Be on the lookout for vehicles which may have lost traction and are slipping towards you. Be aware that approaching vehicles may not be able to stop at crosswalks or traffic signals.
- At night, wear bright clothing or reflective gear, as dark clothing will make it difficult for motorists to see you.
- During the daytime, wear sunglasses to help you see better and avoid hazards.

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Repairing Downed or Damaged Power Lines and Removing Downed Trees

What hazards are associated with repairing downed or damaged power lines?

The work activities involved with repairing downed or damaged lines entail many of the activities involved in installing and removing overhead lines and in general maintenance on overhead lines. The crucial difference is that in emergency conditions, such as winter storms, there are unknown hazards and the potential for changing hazards as work progresses. Under these conditions workers must be extra vigilant and cautious.

Potential hazards include:

- Electrocution by contacting downed energized lines, or contacting objects, such as broken tree limbs, in contact with fallen lines.
- Falls from heights.
- Being struck or crushed by falling poles, towers or parts thereof, tree limbs, ice accumulation on lines, towers and poles.
- Being injured in vehicular accidents when responding to an emergency situation.
- Burns from fires caused by energized line contact or equipment failure.

What protective measures should be utilized when working on or around downed or damaged power lines?

Assume all power lines are energized and stay well clear of any downed or damaged power lines. Establish a safe distance from the lines and report the incident to the responsible authority. Only properly-trained electrical utility workers should handle damaged power lines.

Electrical utility workers should first assess the hazards present in order to minimize the chances of exacerbating the situation. Ideally the lines involved should be de-energized, but this may not be possible in all situations.

When working on downed or damaged power lines, electrical workers should utilize proper electrical safety work practices and personal protective equipment, as usual. However, as mentioned previously, extra caution should be exercised when working in winter storms, due to the adverse conditions present.

What hazards exist during removal of downed trees during a winter storm, and what safety precautions should be taken?

Clearing downed trees is a critical job during a winter storm. When winter storms occur, downed trees can block public roads and damage power lines. Emergency crews are often sent out to clear downed trees during a winter storm.

Potential hazards include:

- Electrocution by contacting downed energized lines or contacting broken tree limbs in contact with fallen lines.
- Falls from trees.

- Being struck or crushed by falling tree limbs or ice.
- Being injured by emergency equipment such as chain saws and chippers.

Proper PPE including gloves, chaps, foot protection, eye protection, fall protection, hearing protection and head protection should be worn by workers using chainsaws and chippers to clear downed trees.

Only appropriate power equipment that is built to be used outdoors and in wet conditions should be used. All saws, chippers, and other tools should be used properly and according to their intended application. It is important that all equipment is well-maintained and functioning correctly in order for use. In addition, all equipment should have proper guarding, working controls, and other safety features as installed by the manufacturer.

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Powered Equipment and Snow Blowers

What are the potential hazards of using powered equipment and snow blowers, and what precautions should be taken?

It is important to make sure that powered equipment, such as chain saws or other power tools, are properly grounded. When performing maintenance or cleaning, make sure that the equipment is properly guarded and is disconnected from power sources.

Snow blowers commonly cause lacerations or amputations when operators attempt to clear jams. *Never attempt to clear a jam by hand.* First, turn the machine off and wait five seconds, and then use a long stick to clear wet snow or debris from the machine. Keep your hands and feet away from moving parts. Additionally, refuel a snow blower prior to starting the machine; do not add fuel to a running or hot engine.

Clearing Snow from Roofs and Working at Heights

Following a winter storm, workers should employ standard protections when working at heights and should also be aware of the potential for unexpected hazards due to the weather. Employers should provide and ensure the use of fall protection and provide and maintain ladders. In addition, workers should use caution around surfaces that have been weighed down by snow, as they may collapse. For more information, see [OSHA's Hazard Alert: Falls and Other Hazards to Workers Removing Snow From Rooftops and Other Elevated Surfaces](#).