

SAFETY IN ADVERSE WEATHER CONDITIONS

COLD WEATHER AND SNOW SHOVELING

While shoveling snow can be good exercise, it can also be dangerous for optimistic shovelers who take on more than they can handle. The following are tips from the National Safety Council for safe shoveling:

- Individuals over the age of 40, or those who are relatively inactive, should be especially careful. If you have a history of heart or back trouble, do not shovel without a doctor's permission. Do not shovel right after eating, or while smoking. Avoid caffeine.
- Stay hydrated! Drink plenty of water before, during, and after shoveling snow.
- Dress warmly. Wear several layers of loose-fitting clothing to insulate your body. You can add or remove clothing as you become too warm or too cold. Protect extremities, such as the nose, ears, cheeks, hands and feet, by wearing clothing that includes a turtleneck sweater, hat/cap, scarf, face protection, gloves/mittens, and wool socks. Seventy-five percent or more of body heat can escape through your head, so keep your head covered while out in the cold! Dry or change out of wet clothes immediately and warm the core body temperature.
- Wear warm, sturdy shoes and boots (preferably waterproof) that have good traction. When conditions are icy and slippery, it is recommended that you wear the Hagemiller Ice Trackers (Personal Protective Equipment) available from your shop or the Facilities warehouse.
- Properly warmed-up muscles are less likely to be strained or injured, so stretch or walk around for a few minutes before you start shoveling. Take it slow! Shoveling (like lifting weights) can raise your heart rate and blood pressure dramatically, so pace yourself.
- Depending on your height, you may need to have an ergonomically correct shovel ordered for your use.
- Begin shoveling slowly to avoid placing a sudden demand on your heart. Pace yourself and take breaks as needed. Don't pick up too much at once. Use a small shovel, or fill only one-fourth to one-half of a large one.
- When possible, push the snow as you shovel. It's easier on your back than lifting the snow out of the way.
- Stand with your feet at the same width as your hips, keep the shovel close to your body, and lift with your knees instead of your back. Keep your back straight. By bending and "sitting" into the movement, you'll keep your spine upright and less stressed. Your shoulders, torso and thighs can do the work for you. Do not twist around to toss the snow -- turn your entire body and step into the direction of where you are putting the snow to prevent back injury.
- Do not work to the point of exhaustion. If you run out of breath, take a break. If you feel tightness in your chest, stop immediately.
- Warm up out of the weather 5-10 minutes of every hour, and be especially mindful of the wind chill factor. Aches/pains in fingers, toes, and ears may signify frostbite! Seek shelter from the elements and place fingers and hands under armpits or on the abdomen. Move arms around in a circle (windmilling) for 20-30 seconds to increase blood flow to the hands. Add warmth to ears and feet any way possible, as long as you do not use extreme heat.

FROSTBITE: WHAT TO LOOK FOR

Superficial frostbite is characterized by white, waxy or grayish-yellow patches on the affected areas. The skin feels uncomfortably cold, and then numb. The skin surface feels stiff and underlying tissue feels soft when depressed. Sometimes there is a tingling or aching feeling or a brief pain.

Deep frostbite is characterized by waxy and pale skin. The affected parts feel cold, hard, and solid and cannot be depressed. Large blisters may appear after re-warming.

What to do

1. Get the victim out of the cold and to a warm place immediately.
2. Remove any constrictive clothing items that could impair circulation.
3. If you notice signs of frostbite, seek medical attention for the victim as soon as possible.
4. If it will be more than an hour until the patient can get medical attention and you have warm water (100-108°F), place the frost bitten part in the water. Test the water first to make sure it is warm, not hot. Do not rub the skin with ice or snow.

HYPOTHERMIA: What to look for

Under most conditions your body maintains a healthy temperature. However, when exposed to cold temperatures or to a cool, damp environment for prolonged periods, your body's control mechanisms may fail to keep your body temperature normal. When more heat is lost than your body can generate, hypothermia can result.

Wet or inadequate clothing, falling into cold water, and even having an uncovered head during cold weather can all increase your chances of hypothermia.

Your normal core body temperature is usually right around 98.6 F. Hypothermia is defined as an internal body temperature less than 95 F (35 C). Signs and symptoms include:

- Shivering
- Slurred speech
- Abnormally slow or irregular breathing and heart rate
- Cold, pale skin
- Loss of coordination, dizziness
- Fatigue, lethargy or apathy
- Disorientation, confusion or memory loss

Signs and symptoms usually develop slowly. People with hypothermia typically experience gradual loss of mental acuity and physical ability, so they may be unaware that they need emergency medical treatment. Older adults, infants, young children and people who are very lean are at particular risk. Other people at higher risk of hypothermia include those whose judgment may be impaired by mental illness or Alzheimer's disease and people who are intoxicated, homeless or caught in cold weather because their vehicles have broken down. Other conditions that may predispose people to hypothermia are malnutrition, cardiovascular disease and an under active thyroid (hypothyroidism).

Treatment for someone with hypothermia:

1. **Dial 911 or call for emergency medical assistance.** While waiting for help to arrive, monitor the person's breathing. If breathing stops or seems dangerously slow or shallow, begin cardiopulmonary resuscitation (CPR) immediately.
2. **Move the person out of the cold.** If going indoors isn't possible, protect the person from the wind, cover his or her head, and insulate his or her body from the cold ground.
3. **Remove wet clothing.** Replace wet things with warm and dry coverings.
4. **Don't apply direct heat.** Don't use hot water, a heating pad or a heating lamp to warm the victim. Instead, apply warm compresses to the neck, chest wall and groin. Don't attempt to warm the

arms and legs. Heat applied to the arms and legs forces cold blood back toward the heart, lungs and brain, causing the core body temperature to drop. This can be fatal.

5. **Don't give the person alcohol.** Offer warm nonalcoholic drinks, unless the person is vomiting.
6. **Don't massage or rub the person.** Handle people with hypothermia gently, because they're at risk of cardiac arrest.

Prevention:

Before you step out into cold air, remember the advice that follows with the simple acronym COLD — cover, overexertion, layers, dry:

- **Cover.** Wear a hat or other protective covering to prevent body heat from escaping from your head, face and neck. In air, most heat (up to 40 percent) is lost through the head. Cover your hands with mittens instead of gloves. Mittens are more effective than gloves are because mittens keep your fingers in closer contact with one another.
- **Overexertion.** Avoid activities that would cause you to sweat a lot. The combination of wet clothing and cold weather can give you chills.
- **Layers.** Wear appropriate loose fitting, layered, lightweight clothing. Outer clothing made of tightly woven, water-repellent material is best for wind protection. Wool, silk or polypropylene inner layers hold more body heat than cotton does. Wearing cotton in cool weather is a particular hypothermia risk as it retains water and water rapidly conducts heat away from the body. Even in dry weather, cotton clothing can become damp from perspiration, and chilly after the wearer stops exercising. Synthetic and wool fabrics provide far better insulation when wet and are quicker to dry. Some synthetic fabrics are designed to wick perspiration away from the body.
- **Dry.** Stay as dry as possible. In the winter, pay special attention to places where snow can enter, such as in loose mittens or snow boots.

HOT WEATHER

- ♦ Strenuous activities should be monitored or rescheduled to the coolest time of the day. Individuals at risk should stay in the coolest available place, not necessarily indoors.
- ♦ Dress as coolly as possible within dress code standard. Wear light-colored clothing.
- ♦ Drink plenty of water or other non-alcoholic fluids. Your body needs water to keep cool. Drink plenty of fluids even if you don't feel thirsty. The following people should consult a physician before increasing their consumption of fluids: (1) Persons who have epilepsy or heart, liver, or kidney disease; (2) Persons on restrictive diets; (3) Persons who have a problem with fluid retention. Plenty of drinking water shall be available at job sites.
- ♦ Do not take salt tablets, unless specified by a physician. Persons on salt restrictive diets should consult a physician before increasing their salt intake.
- ♦ Don't get too much sun. Sunburn makes the job of heat dissipation that much more difficult.
- ♦ First signs of heat stress: Flu-like symptoms, including headache, nausea, dizziness, feeling lightheaded and muscle cramps.
- ♦ Heat stroke is a severe medical emergency. Summon emergency medical assistance or get the victim to a hospital immediately! Delay can be fatal.

HEAT EXHAUSTION

- ◆ Heat exhaustion is usually caused by strenuous physical activity and hot, humid conditions. Because heat exhaustion is the body's response to insufficient water and salt, it should be treated as quickly as possible.

Signs and symptoms of heat exhaustion include the following:

- Exhaustion & restlessness
- Headache
- Dizziness
- Nausea
- Cold, clammy, moist skin
- Pale face
- Cramps in abdomen & lower limbs
- Fast, shallow breathing
- Rapid, weak pulse
- Falling body temperature
- Fainting

Take the following steps to administer first aid for heat exhaustion:

1. Have the victim lie down in a cool or shaded place.
1. Have him/her slowly sip cool water.
2. If the victim does not improve, seek medical aid as soon as possible.
3. Try evaporative cooling by spraying or sponging with water and fanning the victim.

HEAT STROKE:

Heat stroke is usually caused by exposure to extreme heat and humidity. Heat stroke occurs when the body can no longer control its temperature by sweating. Heat stroke is extremely dangerous. It affects the brain and may be fatal if not treated immediately.

The signs and symptoms of heat stroke include the following:

- ✓ Hot, dry skin
- ✓ Dizziness
- ✓ Strong pulse
- ✓ Loss of coordination
- ✓ Headache
- ✓ High temperature
- ✓ Noisy breathing
- ✓ Unconsciousness

Immediately take the following steps to administer first aid for heat stroke:

1. Seek medical attention as soon as possible. Call 911!

2. If possible, move the victim to a cool place.
3. Remove the victim's clothing.
4. Do not attempt to give anything orally.
5. Sponge or spray the body with cool water, and fan the victim at the same time to promote evaporative cooling.
6. Ice bags, chemical ice packs, or cold compresses should be placed in areas where large blood vessels come near the surface, such as the neck, axilla, groin, and scalp.

WEATHER EMERGENCIES

The following sections provide general guidelines for handling various weather emergencies:

◆ **Heavy Rain/High Winds**

- Heavy rain and high winds provide dangerous driving conditions. Motorists should be aware of local weather conditions and avoid roads that tend to flood in heavy rains.
- **Important:** Do not drive in flooded areas or attempt to drive through moving water in a vehicle. Avoid creeks, rivers, ditches, and flooded roads during heavy rains. Keep children from playing in these areas during inclement weather.
- High winds can topple trees, outdoor equipment, and electrical lines. Avoid downed power lines and notify the utility company of power outages. If an electrical line falls across your car, do not move the car or try to get out. Stay where you are until help arrives.

◆ **Lightning**

- Lightning is nature's worst destroyer. A typical lightning bolt contains several hundred million volts at 30,000 or more amperes.
- Lightning need not strike a person directly to be dangerous.
- Lightning can crash down from a virtually clear sky.
- Stay away from open doors or windows during an electrical storm.
- Avoid using the telephone or television set and keep clear of all metal objects such as pipes and electrical appliances during a storm.
- Do not go outside.
-

If you find yourself caught in a storm away from a protected building:

- Avoid tree lines.
- Stay away from unprotected storm shelters.
- Stay away from flagpoles, towers, and metal fences.
- Do not wade, swim, or go boating in a thunderstorm.
- A closed automobile provides a protective metal shell.
- If caught in the open, stay low.

◆ **Tornado**

- Tornadoes produce violent winds that can damage homes, vehicles, people, and wildlife. The primary dangers associated with tornadoes are high winds and flying debris. Severe thunderstorms and hail commonly precede a tornado. A dark funnel cloud or roaring noise (like a train) is evidence of an actual tornado.
- A tornado watch is issued when weather conditions are ideal for a tornado to form. A tornado warning is issued when a tornado is actually identified in the immediate vicinity.
- If a tornado warning is issued, seek shelter immediately. Stay away from windows, doors, and outside walls.
- Do not drive to shelter, unless you are already in a vehicle when the warning is issued. Drive to the nearest building or seek shelter in a ditch or ravine.
- Never try to outrun a tornado in your vehicle.
- If you are in a school, hospital, factory, shopping mall, or other public area, go to the designated shelter area. Interior halls on the lowest floors are usually best.
- If you are at home or in a building, go to an interior room or the lowest level (e.g., bathroom closet, hall, etc.). Get under a piece of sturdy furniture if possible.