



Public Health
Prevent. Promote. Protect.

Pike County General Health District

Winter Weather Safety Recommendations

Updated March 2008

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The following pages were compiled based on information from the Centers for Disease Control and Prevention.

About Winter Weather

When winter temperatures drop significantly below normal, staying warm and safe can become a challenge. Extremely cold temperatures often accompany a winter storm, so you may have to cope with power failures and icy roads. Although staying indoors as much as possible can help reduce the risk of car crashes and falls on the ice, you may also face indoor hazards. Many homes will be too cold—either due to a power failure or because the heating system isn't adequate for the weather. When people must use space heaters and fireplaces to stay warm, the risk of household fires increases, as well as the risk of carbon monoxide poisoning.

Exposure to cold temperatures, whether indoors or outside, can cause other serious or life-threatening health problems. Infants and the elderly are particularly at risk, but anyone can be affected. To keep yourself and your family safe, you should know how to prevent cold-related health problems and what to do if a cold-weather health emergency arises.

The emergency procedures outlined here are not a substitute for training in first aid. However, these procedures will help you to know when to seek medical care and what to do until help becomes available.

What Is Extreme Cold?

What constitutes extreme cold and its effects can vary across different areas of the country. In regions relatively unaccustomed to winter weather, near freezing temperatures are considered “extreme cold.” Whenever temperatures drop decidedly below normal and as wind speed increases, heat can leave your body more rapidly. These weather related conditions may lead to serious health problems. Extreme cold is a dangerous situation that can bring on health emergencies in susceptible people, such as those without shelter or who are stranded, or who live in a home that is poorly insulated or without heat.

Get Prepared

Prepare for extremely cold weather every winter—it's always a possibility. There are steps you can take in advance for greater wintertime safety in your home.

Prepare Your Home for Winter

Although periods of extreme cold cannot always be predicted far in advance, weather forecasts can sometimes provide you with several days' notice. Listen to weather forecasts regularly, and check your emergency supplies whenever a period of extreme cold is predicted.

If you plan to use a fireplace or wood stove for emergency heating, have your chimney or flue inspected each year. Ask your local fire department to recommend an inspector, or find one in the yellow pages of your telephone directory under "chimney cleaning."

Also, if you'll be using a fireplace, wood stove, or kerosene heater, install a smoke detector and a battery-operated carbon monoxide detector near the area to be heated. Test them monthly, and replace batteries twice yearly.

Your ability to feel a change in temperature decreases with age, and older people are more susceptible to health problems caused by cold. If you are over 65 years old, place an easy-to-read thermometer in an indoor location where you will see it frequently, and check the temperature of your home often during the winter months.

Insulate any water lines that run along exterior walls so your water supply will be less likely to freeze. To the extent possible, weatherproof your home by adding weather-stripping, insulation, insulated doors and storm windows, or thermal-pane windows.

If you have pets, bring them indoors. If you cannot bring them inside, provide adequate shelter to keep them warm and make sure that they have access to unfrozen water.

- Insulate walls and attic.
- Caulk and weather-strip doors and windows.
- Install storm windows or cover windows with plastic from the inside.
- Insulate any water lines that run along outer walls (water will be less likely to freeze).
- Service snow-removal equipment.
- Have chimney and flue inspected.
- Install easy-to-read outdoor thermometer.

Prepare for extremely cold weather every winter—it's always a possibility. There are steps you can take in advance for greater wintertime safety in your home and in your car.

Prepare Your Car for Winter

You can avoid many dangerous winter travel problems by planning ahead. Have maintenance service on your vehicle as often as the manufacturer recommends. In addition, every fall:

- Have the radiator system serviced, or check the antifreeze level yourself with an antifreeze tester. Add antifreeze, as needed.
- Replace windshield-wiper fluid with a wintertime mixture.
- Replace any worn tires, and check the air pressure in the tires.

During winter, keep the gas tank near full to help avoid ice in the tank and fuel lines.

Keep your car fueled and in good working order. Be sure to check the following:

- Antifreeze
- Windshield wiper fluid (wintertime mixture)
- Heater
- Brakes
- Ignition
- Emergency flashers
- Exhaust
- Tires (air pressure and wear)
- Fuel
- Oil
- Brake fluid
- Defroster
- Battery
- Radiator

Preparation Checklists

Communication Checklist

- Make sure you have at least one of the following in case there is a power failure:
 - Battery-powered radio (for listening to local emergency instructions). Have extra batteries.
 - National Oceanic and Atmospheric Administration (NOAA) weather radio receiver (for listening to National Weather Service broadcasts). See www.nws.noaa.gov/nwr for more information.
- Find out how your community warns the public about severe weather:
 - Siren
 - Radio
 - TV
- Listen to emergency broadcasts.
- Know what winter storm warning terms mean:
 - Winter weather advisory: expect winter weather conditions to cause inconvenience and hazards.
 - Frost/freeze warning: expect below-freezing temperatures.
 - Winter storm watch: be alert; a storm is likely.
 - Winter storm warning: take action; the storm is in or entering the area.
 - Blizzard warning: seek refuge immediately! Snow and strong winds, near-zero visibility, deep snow drifts, and life-threatening wind chill.

Food and Safety Checklist

Have a week's worth of food and safety supplies. If you live far from other people, have more supplies on hand.

- Drinking water
- Canned/no-cook food (bread, crackers, dried fruits)
- Non-electric can opener
- Baby food and formula (if baby in the household)
- Prescription drugs and other medicine
- First-aid kit
- Rock-salt to melt ice on walkways
- Supply of cat litter or bag of sand to add traction on walkways
- Flashlight and extra batteries
- Battery-powered lamps or lanterns
(To prevent the risk of fire, avoid using candles.)

Water Checklist

Keep a water supply. Extreme cold can cause water pipes in your home to freeze and sometimes break.

- Leave all water taps slightly open so they drip continuously.
- Keep the indoor temperature warm.
- Allow more heated air near pipes. Open kitchen cabinet doors under the kitchen sink.
- If your pipes do freeze, do not thaw them with a torch. Thaw the pipes slowly with warm air from an electric hair dryer.
- If you cannot thaw your pipes, or if the pipes have broken open, use bottled water or get water from a neighbor's home.
- Have bottled water on hand.
- In an emergency—if no other water is available—snow can be melted for water. Bringing water to a rolling boil for one minute will kill most germs but won't get rid of chemicals sometimes found in snow.

Heating Checklist

- Have at least one of the following heat sources in case the power goes out:
 - Fireplace with plenty of dry firewood or gas log fireplace
 - Portable space heaters or kerosene heaters
- Check with your local fire department to make sure that kerosene heaters are legal in your area.
- Never place a space heater on top of furniture or near water.
- Use electric space heaters with
 - automatic shut-off switches and
 - nonglowing elements.
- Keep heat sources at least 3 feet away from furniture and drapes.
- Never leave children unattended near a space heater.
- Have the following safety equipment:
 - Chemical fire extinguisher
 - Smoke alarm in working order (Check once a month and change batteries once a year.)
 - Carbon monoxide detector
- Never use an electric generator indoors, inside the garage, or near the air intake of your home because of the risk of carbon monoxide poisoning:
 - Do not use the generator or appliances if they are wet.
 - Do not store gasoline indoors where the fumes could ignite.
 - Use individual heavy-duty, outdoor-rated cords to plug in other appliances.

Cooking and Lighting Checklist

- Never use charcoal grills or portable gas camp stove indoors—the fumes are deadly.
- Use battery-powered flashlights or lanterns.
- Avoid using candles.
- Never leave lit candles alone.

Car and Emergency Checklist

Prepare your car with emergency supplies.

- Cell phone; portable charger and extra batteries
- Shovel
- Windshield scraper
- Battery-powered radio (and extra batteries)
- Flashlight (and extra batteries)
- Water
- Snack food
- Extra hats, coats, mittens
- Blankets
- Chains or rope
- Tire chains
- Canned compressed air with sealant (emergency tire repair)
- Road salt and sand
- Booster cables
- Emergency flares
- Bright colored flag; help signs
- First aid kit
- Tool kit
- Road maps
- Compass
- Waterproof matches and a can (to melt snow for water)
- Paper towels

Winter Weather Health Emergencies

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. 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 won't be able to do anything about it.

Hypothermia is most likely at very cold temperatures, but it can occur even at cool temperatures (above 40°F) if a person becomes chilled from rain, sweat, or submersion in cold water.

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.

Recognizing Hypothermia

Warnings signs of hypothermia:

Adults:

- shivering, exhaustion
- confusion, fumbling hands
- memory loss, slurred speech
- drowsiness

Infants:

- bright red, cold skin
- very low energy

What to Do

If you notice any of these signs, take the person's temperature. If it is below 95°, the situation is an emergency—get medical attention immediately.

If medical care is not available, begin warming the person, as follows:

- Get the victim into a warm room or shelter.
- If the victim has on any wet clothing, remove it.

- Warm the center of the 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 can help increase the body temperature, but do not give alcoholic beverages. Do not try to give beverages to an unconscious person.
- After body temperature has increased, keep the person dry and wrapped in a warm blanket, including the head and neck.
- Get medical attention as soon as possible.

A person with severe hypothermia may be unconscious and may not seem to have a pulse or to be breathing. In this case, handle the victim gently, and get emergency assistance immediately. Even if the victim appears dead, CPR should be provided. CPR should continue while the victim is being warmed, until the victim responds or medical aid becomes available. In some cases, hypothermia victims who appear to be dead can be successfully resuscitated.

Frostbite

Frostbite is an injury to the body that is caused by freezing. Frostbite causes a loss of feeling and color in affected areas. It most often affects the nose, ears, cheeks, chin, fingers, or toes. Frostbite can permanently damage the body, and severe cases can lead to amputation. The risk of frostbite is increased in people with reduced blood circulation and among people who are not dressed properly for extremely cold temperatures.

Recognizing Frostbite

At the first signs of redness or pain in any skin area, get out of the cold or protect any exposed skin—frostbite may be beginning. Any of the following signs may indicate frostbite:

- a white or grayish-yellow skin area
- skin that feels unusually firm or waxy
- numbness

A victim is often unaware of frostbite until someone else points it out because the frozen tissues are numb.

What to Do

If you detect symptoms of frostbite, seek medical care. Because frostbite and hypothermia both result from exposure, first determine whether the victim also shows signs of hypothermia, as described previously. Hypothermia is a more serious medical condition and requires emergency medical assistance.

If (1) there is frostbite but no sign of hypothermia and (2) immediate medical care is not available, proceed as follows:

- 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).
- Or, warm the affected area using body heat. For example, the heat of an armpit can be used to warm frostbitten fingers.
- Do not rub the frostbitten area with snow or massage it at all. This can cause more damage.
- Don't 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.

These procedures are not substitutes for proper medical care. Hypothermia is a medical emergency and frostbite should be evaluated by a health care provider. It is a good idea to take a first aid and emergency resuscitation (CPR) course to prepare for cold-weather health problems. Knowing what to do is an important part of protecting your health and the health of others.

Taking preventive action is your best defense against having to deal with extreme cold-weather conditions. By preparing your home and car in advance for winter emergencies, and by observing safety precautions during times of extremely cold weather, you can reduce the risk of weather-related health problems.



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Carbon Monoxide Safety Recommendations

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Carbon monoxide (CO) is an odorless, colorless gas that can cause sudden illness and death if inhaled.

When power outages occur during emergencies such as hurricanes or winter storms, the use of alternative sources of fuel or electricity for heating, cooling, or cooking can cause CO to build up in a home, garage, or camper and to poison the people and animals inside.

Every year, more than 500 people die in the U. S. from accidental CO poisoning.

CO is found in combustion fumes, such as those produced by small gasoline engines, stoves, generators, lanterns, and gas ranges, or by burning charcoal and wood. CO from these sources can build up in enclosed or partially enclosed spaces. People and animals in these spaces can be poisoned and can die from breathing CO.

How to Recognize CO Poisoning

Exposure to CO can cause loss of consciousness and death. The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. People who are sleeping or who have been drinking alcohol can die from CO poisoning before ever having symptoms.

Important CO Poisoning Prevention Tips

- Never use a gas range or oven to heat a home.
- Never use a charcoal grill, hibachi, lantern, or portable camping stove inside a home, tent, or camper.
- Never run a generator, pressure washer, or any gasoline-powered engine inside a basement, garage, or other enclosed structure, even if the doors or windows are open, unless the equipment is professionally installed and vented. Keep vents and flues free of debris, especially if winds are high. Flying debris can block ventilation lines.
- Never run a motor vehicle, generator, pressure washer, or any gasoline-powered engine outside an open window, door, or vent where exhaust can vent into an enclosed area.
- Never leave the motor running in a vehicle parked in an enclosed or partially enclosed space, such as a garage.
- If conditions are too hot or too cold, seek shelter with friends or at a community shelter.
- If CO poisoning is suspected, consult a health care professional right away.



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Power Outage Safety Recommendations

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Food Safety

If the power is out for less than 2 hours, then the food in your refrigerator and freezer will be safe to consume. While the power is out, keep the refrigerator and freezer doors closed as much as possible to keep food cold for longer.

If the power is out for longer than 2 hours, follow the guidelines below:

- For the Freezer section: A freezer that is half full will hold food safely for up to 24 hours. A full freezer will hold food safely for 48 hours. Do not open the freezer door if you can avoid it.
- For the Refrigerated section: Pack milk, other dairy products, meat, fish, eggs, gravy, and spoilable leftovers into a cooler surrounded by ice. Inexpensive Styrofoam coolers are fine for this purpose.
- Use a food thermometer to check the temperature of your food right before you cook or eat it. Throw away any food that has a temperature of more than 40 degrees Fahrenheit.

For guidelines on refreezing food when the power comes back on, visit the Food Safety and Inspection Service's page on [Food Safety in an Emergency](#).

The following resources provide additional information on preparing for emergencies and determining if your food is safe after a power outage:

- [Food Safety After a Power Outage, American Red Cross](#)
Provides tips on safely storing your food and a chart to help you determine if your food is still safe.
- [Keeping Food Safe in an Emergency, United States Department of Agriculture](#)
Fact sheet and FAQs on food and water safety including guidance on when to discard perishable foods.
- [Being Prepared, American Red Cross](#)
Comprehensive site on preparing for emergencies including power outages.
- [Food Safety Office, CDC](#)
Comprehensive food safety information.

Safe Drinking Water

When power goes out, water purification systems may not be functioning fully. Safe water for drinking, cooking, and personal hygiene includes bottled, boiled, or treated water. Your state, local, or tribal health department can make specific recommendations for boiling or treating water in your area. Here are some general rules concerning water for drinking, cooking, and personal hygiene. Remember:

- Do not use contaminated water to wash dishes, brush your teeth, wash and prepare food, wash your hands, make ice, or make baby formula. If possible, use

baby formula that does not need to have water added. You can use an alcohol-based hand sanitizer to wash your hands.

- If you use bottled water, be sure it came from a safe source. If you do not know that the water came from a safe source, you should boil or treat it before you use it. Use only bottled, boiled, or treated water until your supply is tested and found safe.
- Boiling water, when practical, is the preferred way to kill harmful bacteria and parasites. Bringing water to a rolling boil for 1 minute will kill most organisms.
- When boiling water is not practical, you can treat water with chlorine tablets, iodine tablets, or unscented household chlorine bleach (5.25% sodium hypochlorite):
 - If you use chlorine tablets or iodine tablets, follow the directions that come with the tablets.
 - If you use household chlorine bleach, add 1/8 teaspoon (~0.75 mL) of bleach per gallon of water if the water is clear. For cloudy water, add 1/4 teaspoon (~1.50 mL) of bleach per gallon. Mix the solution thoroughly and let it stand for about 30 minutes before using it.

Note: Treating water with chlorine tablets, iodine tablets, or liquid bleach will not kill parasitic organisms.

Use a bleach solution to rinse water containers before reusing them. Use water storage tanks and other types of containers with caution. For example, fire truck storage tanks and previously used cans or bottles may be contaminated with microbes or chemicals. Do not rely on untested devices for decontaminating water.

Extreme Heat and Cold

Heat

Be aware of yours and others' risk for heat stroke, heat exhaustion, heat cramps and fainting. To avoid heat stress, you should:

- Drink a glass of fluid every 15 to 20 minutes and at least one gallon each day.
 - Avoid alcohol and caffeine. They both dehydrate the body.
- Wear light-colored, loose-fitting clothing.
- When indoors without air conditioning, open windows if outdoor air quality permits and use fans.
- Take frequent cool showers or baths.
- If you feel dizzy, weak, or overheated, go to a cool place. Sit or lie down, drink water, and wash your face with cool water. If you don't feel better soon, get medical help quickly.
- Work during cooler hours of the day when possible, or distribute the workload evenly throughout the day.

Heat stroke is the most serious heat illness. It happens when the body can't control its own temperature and its temperature rises rapidly. Sweating fails and the body cannot cool down. Body temperature may rise to 106°F or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency care is not given.

Warning signs of heat stroke vary but can include:

- Red, hot, and dry skin (no sweating)
- Rapid, strong pulse
- Throbbing headache
- Dizziness, nausea, confusion, or unconsciousness
- An extremely high body temperature (above 103°F)

If you suspect someone has heat stroke, follow these instructions:

- Immediately call for medical attention.
- Get the person to a cooler area.
- Cool the person rapidly by immersing him/her in cool water or a cool shower, or spraying or sponging him/her with cool water. If the humidity is low, wrap the person in a cool, wet sheet and fan him/her vigorously.
- Monitor body temperature and continue cooling efforts until the body temperature drops to 101-102°F.
- Do not give the person alcohol to drink. Get medical assistance as soon as possible.
- If emergency medical personnel do not arrive quickly, call the hospital emergency room for further instructions.

For more information on heat-related illnesses and treatment, see the [CDC Extreme Heat website](#). Information for workers can be found on the NIOSH webpage [Working in Hot Environments](#).

These resources also provide information about extreme heat:

- [Public Health Issues Related to Summertime Blackouts](#)
- [Heat Stress, NIOSH \(National Institute for Occupational Safety and Health\)](#)
Comprehensive heat-induced occupational illness and injury information.

Cold

Hypothermia happens when a person's core body temperature is lower than 35°C (95°F). Hypothermia has three levels: acute, subacute, or chronic.

- **Acute hypothermia** is caused by a rapid loss of body heat, usually from immersion in cold water.
- **Subacute hypothermia** often happens in cool outdoor weather (below 10°C or 50°F) when wind chill, wet or too little clothing, fatigue, and/or poor nutrition lower the body's ability to cope with cold.

- **Chronic hypothermia** happens from ongoing exposure to cold indoor temperatures (below 16°C or 60°F). The poor, the elderly, people who have hypothyroidism, people who take sedative-hypnotics, and drug and alcohol abusers are prone to chronic hypothermia, and they typically:
 - misjudge cold
 - move slowly
 - have poor nutrition
 - wear too little clothing
 - have poor heating system

Causes of Hypothermia

- Cold temperatures
- Improper clothing, shelter, or heating
- Wetness
- Fatigue, exhaustion
- Poor fluid intake (dehydration)
- Poor food intake
- Alcohol intake

Preventing Hypothermia

- Everyone, especially the elderly and ill, should have adequate food, clothing, shelter, and sources of heat.
- Electric blankets can help, even in poorly heated rooms.
- Wear layers of clothing, which help to keep in body heat.
- Move around. Physical activity raises body temperature.

Water cooler than 75°F (24°C) removes body heat more rapidly than can be replaced. The result is hypothermia. To avoid hypothermia:

- Avoid swimming or wading in water if possible.
 - If entering water is necessary:
- Wear high rubber boots in water.
- Ensure clothing and boots have adequate insulation.
- Avoid working/playing alone.
- Take frequent breaks out of the water.
- Change into dry clothing when possible.

Helping Someone Who Is Hypothermic

As the body temperature decreases, the person will be less awake and aware and may be confused and disoriented. Because of this, even a mildly hypothermic person might not think to help himself/herself.

- Even someone who shows no signs of life should be brought quickly and carefully to a hospital or other medical facility.

- Do not rub or massage the skin.
- People who have severe hypothermia must be carefully rewarmed and their temperatures must be monitored.
 - Do not use direct heat or hot water to warm the person.
- Give the person warm beverages to drink.
- Do not give the person alcohol or cigarettes. Blood flow needs to be improved, and these slow blood flow.

For more information about hypothermia, see [Extreme Cold: A Prevention Guide to Promote Your Personal Health and Safety](#).

First Aid for Electrical Shock

If you believe someone has been electrocuted take the following steps:

1. Look first. Don't touch. The person may still be in contact with the electrical source. Touching the person may pass the current through you.
2. Call or have someone else call 911 or emergency medical help.
3. Turn off the source of electricity if possible. If not, move the source away from you and the affected person using a nonconducting object made of cardboard, plastic or wood.
4. Once the person is free of the source of electricity, check the person's breathing and pulse. If either has stopped or seems dangerously slow or shallow, begin cardiopulmonary resuscitation (CPR) immediately.
5. If the person is faint or pale or shows other signs of shock, lay the person down with the head slightly lower than the trunk of his or her body and the legs elevated.
6. Don't touch burns, break blisters, or remove burned clothing. Electrical shock may cause burns inside the body, so be sure the person is taken to a doctor.

Power Line Hazards and Cars

If a power line falls on a car, you should stay inside the vehicle. This is the safest place to stay. Warn people not to touch the car or the line. Call or ask someone to call the local utility company and emergency services.

The only circumstance in which you should consider leaving a car that is in contact with a downed power line is if the vehicle catches on fire. Open the door. Do not step out of the car. You may receive a shock. Instead, jump free of the car so that your body clears the vehicle before touching the ground. Once you clear the car, shuffle at least 50 feet away, with both feet on the ground.

As in all power line related emergencies, call for help immediately by dialing 911 or call your electric utility company's Service Center/Dispatch Office.

Do not try to help someone else from the car while you are standing on the ground.

Avoid Carbon Monoxide

For important information about the risk of carbon monoxide poisoning during a power outage, see [Protect Yourself from Carbon Monoxide Poisoning After an Emergency](#) and [Carbon Monoxide Poisoning Fact Sheet](#) (from CDC's National Center for Environmental Health [NCEH]).

Safety at Work During Power Recovery

As power returns after an outage, people at work may be at risk of electrical or traumatic injuries as power lines are reenergized and equipment is reactivated. CDC recommends that employers and employees be aware of those risks and take protective steps if they are in contact with or in proximity to power lines, electrical components, and the moving parts of heavy machinery. More information on electrical safety is available in our fact sheet on [Worker Safety in Power Outages](#) or at www.cdc.gov/niosh/injury/traumaelec.html.

Be Prepared for an Emergency

CDC recommends that people make an emergency plan that includes a disaster supply kit. This kit should include enough water, dried and canned food, and emergency supplies (flashlights, batteries, first-aid supplies, prescription medicines, and a digital thermometer) to last at least 3 days. Use battery-powered flashlights and lanterns, rather than candles, gas lanterns, or torches (to minimize the risk of fire). You can find more information on emergency plans and supply kits at www.ready.gov.