



Flooding: What you need to know

From the Branch-Hillsdale-St. Joseph Community Health Agency

Floods, big or small, can have devastating effects on your home and your family. Floods can contaminate food and water, which can cause illness. Floods can lead to other dangers as well, like carbon monoxide poisoning, mold growth, electrical and fire hazards and more.

Sanitation and hygiene are very important during and after a flood because infections are likely to spread. Illness and outbreaks can occur long after a flood is cleaned up due to spoiled food, contaminated water, power outage or exposure to mold.

This guide addresses the main hazards associated with a flood.

Flooded wells

During and after a flood, water can become contaminated with harmful bacteria, viruses, sewage, fertilizers, pesticides and other chemicals.

If your well has been covered with flood water, bacteria can enter your well through the cap or vent, and contaminate your drinking water. If this happens, your well will need to be disinfected by a licensed well driller. You can contact the Branch-Hillsdale-St. Joseph Community Health Agency (BHSJCHA) for a list of licensed well drillers in your area.

If your well has been flooded, it's important to:

- Use only bottled or boiled water for drinking, cleaning, cooking, washing hands, brushing teeth, making baby formula and bathing infants and toddlers. (See boil water information below).
- Once the flooding recedes, begin flushing the water system. Hook a hose up to an outside faucet or a faucet near the water storage tank and flush the water for at least two hours after the water clears up. If a large volume of water entered the well, several hours of pumping may be needed. Once the water is clear at the storage tank, flush the home distribution piping. Contact a state of Michigan licensed water well driller if you have any questions or difficulty with this process.
- Contact a state of Michigan licensed water well driller and ask them to disinfect your home distribution system.
- Your water will need to be tested for coliform bacteria. Contact BHSJCHA for instructions on how to collect a water sample.

Flooded Interior and mold

Exposure to mold can cause stuffy nose, irritated eyes, skin irritation, wheezing and difficulty breathing.

When flood water recedes from your home/basement, immediately clean wet items and surfaces with detergent and water. If mold is present, you'll need to remove the mold with

bleach and water solution. Be sure to wear rubber gloves, open windows and doors, and clean with a bleach solution of 1 cup of bleach in 1 gallon of water. Throw away porous items (carpet, upholstered furniture, clothes, mattresses, etc.) that cannot be dried quickly. If drywall or wallpaper comes in contact with floodwater, it should be removed to prevent mold growth.

Contact your local garbage company regarding pick up of large trash items.

All hard surfaces, such as flooring, wood and metal furniture, sinks and appliances can be cleaned with hot water and detergent. Be sure to fix any leaks in roofs, walls or plumbing. If your efforts to clean up mold are unsuccessful, you will need to contact a mold remediation specialist. For more information, visit

<https://www.cdc.gov/disasters/floods/cleanupwater.html>.

Drinking water

Local authorities will let residents know if public drinking water is not safe and if you should use bottled or boiled water for drinking, cleaning, cooking, washing hands, brushing teeth, making baby formula and bathing infants and toddlers. (See boil water instructions below).

Food

Throw away food that may have come in contact with flood water, including any canned foods that are bulging, opened or damaged. Throw away food with an unusual odor, color or texture. Throw away perishable food (including meat, poultry, fish, eggs and leftovers) that has been above 41 degrees for two hours or more. If cans have come in contact with floodwater or storm water, remove the labels, wash the cans and dip them in a solution of one cup of bleach in five gallons of water. Re-label the cans with a marker.

While the power is out, keep the refrigerator and freezer doors closed as much as possible. Add block ice or dry ice to your refrigerator if the electricity is expected to be off longer than four hours. Wear heavy gloves when handling ice.

Carbon monoxide poisoning

Carbon monoxide is an odorless, colorless gas produced by many types of equipment and is poisonous to breathe. When power outages occur, people sometimes use alternative sources of fuel or electricity for heating, cooling, or cooking. These alternative sources can cause carbon monoxide to build up in a home, garage, or camper and poison the people and animals inside.

Symptoms of carbon monoxide poisoning include headache, dizziness, weakness, nausea, vomiting, chest pain and confusion. Exposure to Carbon monoxide can cause loss of consciousness and death.

Important carbon monoxide 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 (including basement and garage), tent, or camper or near a window, door or vent.
- Never run a generator or gasoline-powered engine inside a basement, garage, or other enclosed structure, even if the doors or windows are open, unless professionally installed and vented.

- Never run a motor vehicle, generator or any gasoline-powered engine outside an open window, door, or vent where exhaust can vent into an enclosed area.
- Never leave a vehicle's motor running when parked in a garage, even if the doors are open.
- If conditions are too hot or too cold, seek shelter with friends or family or at a shelter.

If a carbon monoxide detector sounds, leave the home immediately and call 9-1-1. Seek prompt medical attention if you suspect carbon monoxide poisoning and are feeling dizzy, light-headed or nauseated.

Electrical and fire hazards

Never touch a fallen power line. Instead, contact the utility company. If electrical circuits and equipment have gotten wet or are in or near water, turn off the power at the main breaker or fuse on the service panel. Do not turn the power back on until electrical equipment has been inspected by a qualified electrician. Do not burn candles near flammable items or leave a candle unattended. If possible, use flashlights or other battery-operated lights instead of candles.

Wash your hands

If you come in contact with flood water, make sure to wash your hands with soap and clean water. If water isn't available, you can use hand sanitizer.

Treat wounds

Clean all open wounds and cuts with soap and clean water. Apply an antibiotic ointment. If a wound gets red, swells or drains, contact your doctor.

Avoid floodwater

Do not drive through floodwater, no matter how shallow it may seem. The average automobile can be swept off the road in 12 inches of moving water, and roads covered by water are prone to collapse. Attempting to drive through water also may stall your engine, with the potential to cause irreparable damage if you try to restart the engine. If you come upon a flooded street, take an alternate route.

Avoid mosquito bites

Flooded areas are prime breeding grounds for mosquitos, known carriers of West Nile Virus and other mosquito borne diseases. Mosquito borne diseases can cause serious illness in people, so it's important to protect yourself. Prevent mosquito bites by wearing long pants, socks, and long-sleeved shirt and by using insect repellent that contains DEET.

Additional Tips

If under a flood watch or warning:

- Gather emergency supplies
- Stay tuned to local radio or television stations for updates.
- Turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary.

- Have immunization records handy or be aware of your last tetanus shot, in case you receive a puncture wound or a wound becomes contaminated during or after the flood.
- Fill bathtubs, sinks and plastic soda bottles with clean water. Sanitize the sinks and tubs first by using bleach. Rinse and fill with clean water.
- Bring outdoor possessions, such as lawn furniture, grills and trash cans inside or tie them down securely.

When a flood watch is issued, you should:

- Fill your vehicle's gas tank and make sure you have an emergency kit for your car.
- If no vehicle is available, make arrangements with friends or family for transportation.
- Review your emergency plans and supplies, checking to see if items are missing.
- Stay tuned to local radio or television stations for updates.
- Put livestock and family pets in a safe area.
- Adjust the thermostat on refrigerators and freezers to the coolest possible temperature.

Boil Water Instructions

Boiling water kills microorganisms such as bacteria and viruses that can cause disease. Simply bring tap water to a full rolling boil, let it boil for one minute, and let it cool before using.

Boiling tap water is the preferred method for making sure it is safe to drink. If you can't boil your water, you should:

- Use bottled water.
- Use liquid household bleach to disinfect tap water. The bleach product should be recently purchased, free of additives and scents, and should contain a hypochlorite solution of at least 5.25%. If the water is clear, add 8 drops of bleach (about 1/8 teaspoon) to each gallon of water. Add twice the amount of bleach (16 drops, or 1/4 teaspoon) to each gallon if the water is cloudy. After adding bleach, the water should be stirred and allowed to stand for at least 30 minutes before use.
- Water purification tablets may also be used to disinfect tap water by following the manufacturer's instructions.

Boiled or bottled water should be used for drinking, cleaning, cooking, washing hands, brushing teeth, making formula and bathing infants and toddlers. Use boiled or bottled water in coffee machines. Do not use water or ice from your refrigerator's dispenser. Water treatment devices do not remove harmful microorganisms from tap water, so be sure to use bottled or boiled water.

You do not need to boil water for:

- Washing dishes: Adding a tablespoon of household bleach such as Clorox® to a sink full of tap water should be sufficient to treat the water used for washing dishes. Bleach should also be added to the water for rinsing dishes. Allow dishes and utensils to air dry before reuse. You may wash dishes in an electric dishwasher, but be sure to use it with its heating elements turned on. After washing in an electric dishwasher, dishes should be rinsed in water with a tablespoon of bleach added, and allowed to air dry before reuse.

- Bathing or showering: Adults, teens, and older children, can shower or bathe, though they should avoid getting water in the mouth or swallowing the water. Infants and toddlers should be bathed using boiled or bottled water. Care should be taken to prevent water from getting into deep open or post-surgical wounds. Consult your physician or health care provider for wound care instructions
- Doing laundry in a washing machine

For more information about flooding and other important health information visit us on the web at

www.bhsj.org

on Facebook at

www.facebook.org/bhsjwic

Or call you local Health Department office at

Coldwater

517-279-9561 x 0106#

Hillsdale

517-437-7395 x 0311#

Three Rivers

269-273-2161 x 0233#