



Iowa Department of Public Health
Bureau of Immunization and Tuberculosis

Immunization Recommendations During and After Flooding

When flooding occurs, many people wonder if they need extra vaccines: fortunately the answer is no.

The fact that flooding is occurring does NOT increase your risk of getting sick from diseases like hepatitis A, tetanus and hepatitis B. Even if you are working or wading in flood waters or cleaning up after the flood waters have receded, your chance of getting these diseases is no greater than usual; however, everyone at all times should be up-to-date on all their recommended vaccines, including when flooding is occurring.

All Iowa adults should be routinely vaccinated against:

- tetanus, diphtheria, and pertussis; everyone should receive basic series of immunizations during early childhood then a booster shot every 10 years
- influenza; should receive a shot every year in the fall

All adults should also ensure that they had received routine childhood vaccinations against measles, mumps rubella (MMR vaccine), polio, and chickenpox (unless they had the actual disease as child).

There are also special vaccines for people with specific risks; for example hepatitis B vaccine for health care workers, and meningococcal vaccine for travelers to parts of Africa.

If at any time, including during disasters like flooding, you sustain a skin injury (your skin is cut or punctured) you should seek medical care for that wound. You may need to take antibiotics or receive tetanus shots.

If you have any questions about immunizations, call your healthcare provider, local health department or the immunization program at the Iowa Department of Public Health at 800-831-6293.



Iowa Department of Public Health
Bureau of Environmental Health Services

Reentering Your Flooded Home

Overview: When returning to a home that's been damaged by natural disasters like tornadoes, and floods, be aware that your house may contain hazards, which can cause health risks for your family.

When You First Reenter Your Home

- If you have standing water in your home, turn off the main power to your home if you can do it from a dry location. **NEVER turn power on or off yourself or use an electrical tool or appliance while standing in water: Call your power company or have an electrician disconnect your power from the outside.**
- Have an electrician check the house's electrical system before turning the power on again.
- If the house has been closed up for several days, enter briefly to open doors and windows to let the house air out for awhile (at least 30 minutes) before you stay for any length of time.
- If your home has been flooded and has been closed up for several days, presume your home has been contaminated with mold. (See "Frequently Asked Questions About Mold")
- If your home has been flooded, it also may be contaminated with sewage or chemicals. (See "Cleaning and Disinfecting After a Flood")

Dry Out Your House

If flood or storm water has entered your home, dry it out as soon as possible. Follow these steps:

- Use a wet-dry vacuum (or the vacuum function of a carpet steam cleaner), and electric-powered water transfer pump, or sump pump to remove standing water. If you are operating equipment in wet areas, be sure to wear rubber boots.
- If electricity is unavailable, you can use a portable generator to power equipment to remove standing water.
- **If you must use a gasoline-powered pump, generator, pressure washer, or any other gasoline-powered tools, never operate the gasoline engine inside a home, basement, garage, carport, porch, or other enclosed or partially enclosed structures, even if the windows and doors are open. Improper use can create dangerously high levels of carbon monoxide and cause carbon monoxide poisoning.**
- If weather permits, open windows and doors of the house to aid in the drying out process.

Dry Out Your House (Cont.)

- Use fans and dehumidifiers to remove excess moisture. Fans should be placed at a window or door to blow the air out of the structure rather than in.
- Have your home heating, ventilating, and air-conditioning (HVAC) system checked and cleaned by a professional who is experienced in mold clean-up **before you turn it on.** If the HVAC system was flooded with water, turning on the mold-contaminated HVAC system can spread mold throughout the house. Professional cleaning will remove the mold and prevent later mold growth. When the service determines that your system is clean and if it is safe to do so, you can turn your HVAC system on and use it to help remove excess moisture from your home.
- Prevent water outdoors from reentering your home. For example, gutters should be kept free of debris; rain water from gutters or the roof should drain away from the house; the ground around the house should slope away from the house to keep basements and crawl spaces dry.
- Ensure that crawl spaces in basements have proper drainage to limit water seepage. Ventilate to allow the area to dry out.

Source: <http://emergency.cdc.gov/disasters/mold/pdf/reenterfloodedhome.pdf>



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Frequently Asked Questions About Cleaning Flooded Basements

Overview: Strong storms and heavy rainfalls can cause flooding throughout Iowa. As residents clean out their flood-damaged homes, the Iowa Department of Public Health has developed this fact sheet to address common questions from the public related to basement clean-up after a flooding event.

What should I do before entering a flooded basement?

1. Turn off the electricity, preferably at the meter. If you cannot safely turn it off, contact your utility company to have it disconnected.
2. Turn off all gas valves.
3. Check outside cellar walls for possible cave-ins, structural damage, or other hazards.
4. Open doors and windows, or use blowers to force fresh air into the basement. Gas may be trapped inside your home.
5. Wear rubber gloves when handling materials that have been in floodwater.

What should I know before pumping water out of my basement?

Do not use an electric pump powered by your own electrical system. Instead, use a gas-powered pump, or one connected to an outside line. Never place a gas-powered unit inside. Always place it outside in a well-ventilated area to avoid carbon monoxide.

More damage may be done by pumping water from the basement too soon or too quickly, than from letting the floodwater remain. Water in the basement helps brace the walls against the extra pressure of water-logged soil outside. If water is pumped out too soon, walls may cave in from the outside water pressure.

To help prevent structural damage, pump water out of your basement in stages. Remove about a third of the water each day to prevent structural damage or collapsing of basement walls due to unequal pressure.

What about the clean-up process?

- Shovel out any mud and debris while it is still moist.
- Hose down walls and remove as much silt as possible before it dries.
- Floors and walls may need sanitizing, particularly if sewage has entered the basement.
- Scrub walls and floors with a mild bleach and water solution prepared according to the manufacturer's instructions. Allow the area to dry completely.

In homes without basements the area below the floor may be completely filled with mud. Remove the mud as soon as possible to avoid rotting floor joists or the foundation.



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Cleaning and Disinfecting After a Flood

Follow these simple rules for cleaning and disinfecting items after flooding:

- 1.** Make sure the item is in **good repair**. Items that have been torn, splintered, cracked, broken, dented, etc. should be discarded and replaced.
- 2.** To clean small items soaked by flood waters that are **porous** (**will** absorb water) such as bedding, clothing, stuffed animals, etc.
 - Pre-soak items in cold water before machine washing to remove mud and filth. **DO NOT** pre-soak in your washer as it may cause damage. Curtains, blankets, accent rugs and other large items can be hung on a line and hosed down to remove mud and filth.
 - Use hot water and detergent when washing items. Be careful not to overload the washing machine.
 - Add 1 cup of liquid chlorine bleach to wash water before adding clothes or other items, use ½ cup bleach for front loading washers.
 - Tumble dry in a dryer or hang items to dry in the sun.
- 3.** Large items that are **porous** such as patio upholstered furniture, mattresses wall to wall carpeting, etc., that have been soaked by flood waters **MUST** be discarded.
- 4.** To clean items that are **solid** (**will not** absorb water) such as a concrete, tile or vinyl flooring, plastic patio furniture, plastic toys, picture frames, etc. use a mild household detergent solution to clean the item.
- 5. Prepare a bleach solution following the manufacturer's label instructions for disinfecting.** To disinfect **solid** items (after cleaning), make a mild bleach and water solution, use the solution in one of these ways:
 - Immerse small objects in the bleach/water solution for one minute. Remove from the solution and allow to air dry.
 - Spritz/spray the bleach/water solution on the item until thoroughly wet and allow to air dry.
 - Use a cloth dipped in the bleach/water solution to completely wipe the item down and allow to air dry.

If in DOUBT, throw it OUT!



Iowa Department of Public Health Bureau of Environmental Health Services

After the Flood: What to do about Personal Items

Overview: Sewage and chemicals found in flood waters may have contaminated your clothing, furniture, and bedding. Some items can be saved, while other items need to be thrown out. Start cleaning as soon as possible to prevent further damage.

Where do I Start?

Sort what you can keep and what you need to throw away. If there is any doubt about an item, the safest action is to throw it away and buy new. Clean any salvageable non-porous (does not absorb water) items with detergent or soap and water. Then, wipe down or wash with a solution of bleach and water. Prepare the bleach solution following the manufacturer's label instructions for disinfecting.

Clothing and Cloth Materials

Decide what you can keep. Many items labeled "dry clean only" and other damaged items are already ruined. Throw these away.

- Separate wet items to keep clothing colors from running together.
- If you cannot wash clothing right away, rinse items with clean water. Reshape clothing and lay flat to air dry.
- Wash clothing on the hottest setting possible. Then rinse with bleach and water solution. If clothing cannot be bleached, use a color-safe (oxygen) bleach product.
- Reshape dry-cleanable items and lay flat to dry. Dry cleaning may not be effective.

Upholstered Furniture

It is best to throw out upholstered furniture that has been saturated with flood waters. If the furniture has only had minimal contact with flood waters, remove the fabric. Plan to re-upholster. Throw away all fabric, padding and stuffing that is contaminated with flood waters.

- Clean the furniture with soap and water.
- Disinfect by wiping down the furniture with bleach and water solution.
- Dry the furniture completely. Use a fan and indirect heat. Air drying outside may be effective. To protect exposed wood, dry in direct sunlight.

Bedding

It is best to throw out mattresses and pillows that are contaminated with flood waters. It is possible to clean other bedding.

- Rinse bedding with clean water to remove mud and other debris.
- Wash bedding in detergent and water. Use the hottest water possible.
- Disinfect by rinsing in a bleach and water solution.
- Dry in the dryer at the hottest setting possible or air dry in the sunlight.

Carpet and Rugs

Throw away carpet and pads that are heavily contaminated with flood water, sewage, and other residue. You may be able to save carpet and rugs that have been soaked with cleaner groundwater. It is important to dry out carpet quickly to prevent mold from growing.

- Remove carpet and rugs from the house. Throw away carpet pads.
- Soak up excess water from carpets with a wet vacuum and blankets and towels.
- Shampoo the carpet or rug.
- Disinfect by using a sponge dipped in bleach and water solution. Test first to make sure the color does not fade out.
- Rinse several times with clear water sponged onto the carpet.
- Allow carpet to dry completely.
- Do not replace any carpet or rugs until the subfloors are dry.

Appliances

Dirty flood water can cause many problems if it gets into your appliances. If it gets into the electrical parts, they can corrode and cause the appliance to short out. If flood water gets into the insulation, it can cause odor and mold problems. Many flood-damaged appliances can be saved, but first they must be completely dried. Flood-damaged appliances should be checked by a service technician.

Be sure the electricity is completely shut off in your house before removing any appliance!

- Motors, electrical parts, and metal parts need to be cleaned.
- Do not hose down appliances. Spraying water into appliances can cause more damage.
- Remove and replace any wet insulation inside the appliance.
- Clean the outside of the appliance with a household cleaner or soap and water. Clean the inside with 1-2 tablespoons baking soda mixed in 1 quart of water.
- Disinfect by rinsing the inside and outside with a solution of bleach and water.

Refrigerated appliances contain a refrigerant gas that can harm the environment. They should not be dumped or put in a landfill. Please check with your local landfill to find out where to drop off flood-damaged appliances for proper recycling.



Iowa Department of Public Health Bureau of Environmental Health Services

Food Safety During a Power Outage

Overview: When the power goes out for a prolonged time there is a risk that food in your refrigerator and freezer could spoil or become unsafe. This fact sheet provides guidance for keeping food safe during and after a power outage.

Be Prepared

Make sure you have appliance thermometers in your refrigerator and freezer.

- Keep your freezer at or below **0 °F**, and the refrigerator at or below **40 °F**.
- In case of a power outage, the appliance thermometers will indicate the temperatures in the refrigerator and freezer to help you determine if the food is safe.

If possible, freeze containers of water for ice before a power outage to help keep food cold in the freezer, refrigerator, or coolers in case the power goes out.

When the Power Goes Out

Keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperature.

- The refrigerator will keep food cold for about 4 hours if it is unopened.
- A full freezer will keep the temperature for approximately 48 hours (24 hours if it is half full) if the door remains closed.

Once Power is Restored

If your freezer temperature reads 40°F or below, the food is safe and may be refrozen.

- If a thermometer has not been kept in the freezer, check each package of food to determine its safety. You can't rely on appearance or odor. If the food still contains ice crystals or is 40 °F or below, it is safe to refreeze or cook.

Refrigerated food should be safe as long as the temperature did not rise above 40°F.

- Discard any perishable food (such as meat, poultry, fish, eggs, or leftovers) that have been above 40°F for two hours or more.

If you plan to eat refrigerated or frozen meat, poultry, fish or eggs while it is still at safe temperatures, it's important that each item is thoroughly cooked to its proper temperature to assure that any foodborne bacteria that may be present are destroyed.

Safe Cooking Temperatures as measured with a food thermometer	Internal Temperature
Ground Meat (except Poultry)	160°F
Fresh Beef, Pork, Veal, Lamb	145°F
Poultry (Whole cuts or Ground)	165°F
Seafood	145°F
Leftovers & Casseroles	165°F



Iowa Department of Public Health Bureau of Environmental Health Services

Flooded Private Sewage Systems Safety, Sanitation, and Clean-Up Concerns

Overview: Flooding of a private sewage system can be a hazardous situation for homeowners. It may lead to a back-up of sewage in the home, contaminated drinking water, and lack of sanitation. While you do not have control over rainfall or flooding in your area, you can prepare for high water problems and respond to emergency flooding.

Why do problems occur in private sewage systems during floods?

When flooding or saturated soil conditions persist, a private sewage system cannot function properly. Soil treatment systems for wastewater rely on aerobic (with oxygen) regions to reduce the amounts of chemicals and living organisms (viruses, bacteria, and protozoa) in the wastewater. When the soil is saturated or flooded, there is no oxygen to reduce these hazardous materials. They can then enter the groundwater and your drinking water supply.

Preparing for flooding

If you are prepared when flooding occurs, your family can be safe and your system should survive. To prepare for a flood you should:

- Make sure all septic tanks are full of liquid. Do not have the tank pumped during the high-water season. Empty tanks are buoyant and may 'pop out' of the ground during flooding.
- Plug floor drains, if necessary, to keep sewage from backing up into the basement. However, flood water may still enter the basement through cracks and seams.
- If parts of your septic system are above ground, be sure the openings are sealed to prevent silt from entering the system.

During the Flood

- Do not use your private sewage system. If possible, use portable toilets or use any large container with a tight-fitting lid for a temporary toilet. Line the container with a plastic bag, and empty the container after use far away from your well.
- Remember that a well may become contaminated during a flood. Therefore, **DO NOT DRINK THE WATER**. Drink bottled water or disinfect water before drinking.
- Do not bathe or swim in floodwater. It may contain harmful organisms.

After the Flood

- Do not use the sewage system until water in the disposal field is lower than the water level around the house.
- If you suspect damage to your septic tank, have a professional inspect and service it. Signs of damage include settling or inability to accept water. Because septic tanks may contain dangerous gases, only trained professionals should clean or repair them.
- Do not pump water out of basements too quickly. Exterior water pressure could collapse the walls.
- If sewage has backed up into the basement, clean the area and disinfect the floor with a solution of chlorine bleach and water. Prepare the bleach solution according to the manufacturer's label instructions for disinfecting.

Information provided by:



Reviewed 5/29/2014



Iowa Department of Public Health

Keeping Pets Safe and Healthy After a Flood

This information was provided by the Iowa Department of Agriculture and Land Stewardship

- Pets can be allowed outside on ground that was previously covered by flood water after 24 to 48 hours of drying.
- Survey the area inside and outside your home for sharp objects, dangerous materials, wildlife, contaminated water, downed power lines, or other hazards.
 - Ensure that all debris and waste is collected and properly disposed of off your property prior to releasing pets to the inside and outside of your home.
- Initially release cats, dogs, and other small animals indoors only.
 - Birds and reptiles should only be released if necessary and only when they are calm and in an enclosed room.
- Be aware that familiar scents and landmarks may have changed, and this can confuse your animals.
- Reintroduce food in small servings, gradually working up to full portions if animals have been without food for a prolonged period of time.
- Allow uninterrupted rest/sleep for all animals to recover from the trauma and stress.
- Use licensed boarding facilities or animal shelters for animal care while you prepare your home and property for your pets' return.
- Periodically examine your animals and contact your veterinarian immediately if you observe injuries or signs of illness.
- Visit the Iowa Department of Agriculture and Land Stewardship web site at www.iowaagriculture.gov.

