

# FLOODING: HEALTH, SAFETY AND ENVIRONMENTAL ISSUES

Flooding can create serious health and safety risks. Floodwater may come into contact with many sources of pollution including waste produced from agricultural operations, chemicals and raw sewage, and can carry diseases that impact human health. Floodwater should always be considered contaminated.

Heavy rains, spring thaw and quickly melting snow can cause rivers, creeks or streams to overflow and flood. Changing rainfall patterns and extreme weather due to climate change can also increase the risk of flooding. Some floods develop slowly, while others develop in minutes.

People who live in low-lying areas tend to be at a greater risk from damage caused by flooding. Pay attention to local media reports for flood-related information, especially in a severe flooding event, so you can prepare and respond appropriately.

Environment Canada issues [Special Weather Statements](#) when heavy rainfall has the potential to cause local flooding. Conservation authorities also communicate local flood messaging including:

1. **Flood Warnings:** Flooding is imminent or already occurring
2. **Flood Watches:** Potential for flooding
3. **Watershed Conditions Statements:** Early notice of potential flooding based on heavy rain, melting snow or other factors and water safety information

Follow the advice and instructions of emergency response authorities if a flood warning has been issued for your area and be aware of the public health risks.

## PREVENT INJURIES

### Avoid drowning

- Stay away from moving water and avoid already flooded areas. Cold water temperatures and slippery or unstable streams and riverbanks make these areas particularly dangerous
- Roadbeds may be washed out under floodwaters. Never drive through a flooded roadway. If your vehicle is suddenly caught in rising water, leave it immediately and get to higher ground
- Be especially cautious at night when it is harder to recognize flood dangers

### Avoid electrocution

Flooding can cause electrical hazards. To avoid electrical shocks or electrocution:

- Wear rubber boots
- Shut off the power to the flooded area at the breaker box. Ask your electrical utility for help if needed
- Stay out of floodwaters as much as possible, especially near electrical lines or outlets
- Never touch or approach downed power lines or anything in contact with them. If a power line falls on your car, stay inside your car until you are told by local authorities to get out or if the car catches fire

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- Do not touch a person who has been electrocuted before making sure the person is no longer touching the electrical source
- Never operate an electrical device or handle extension cords while standing in or near water
- Do not return home after a flood until local authorities have told you it is safe to do so

## PREVENT ILLNESS

### Avoid exposure to floodwaters

- Wear boots, face masks and rubber gloves and avoid contact with floodwaters to reduce your exposure to infectious diseases and chemical hazards
- If you are exposed to floodwaters and you develop diarrhea, vomiting or fever, seek immediate medical attention
- If you have open cuts that are exposed to floodwater, cleanse the wound with soap and bottled water and apply antibiotic ointment. If redness or swelling of the wound occurs, seek immediate medical attention
- Always wash hands after handling articles contaminated by floodwater. If soap and water are not available for hand washing, use hand sanitizer
- It is important to have up-to-date immunizations as there are many pathogens in floodwaters that can lead to vaccine preventable illnesses, like tetanus

### Avoid drinking contaminated water

- Municipal water is safe and treated, but in the event of flooding, follow public service announcements about the municipal water supply
- If your water comes from a well and has been contaminated with flood waters, do not use the water for cooking, drinking or bathing. Use bottled water or water from an approved source, such as a municipal water supply
- Boiling does not remove chemicals from well water contaminated by floodwaters
- Flooded wells should be tested for bacteria before the water is consumed

### Prevent food-borne illness and keep food safe

- Do not eat food or drink liquids that have come into contact with floodwaters, including items in the freezer or fridge, opened jars of food and bottled drinks. If you are unsure whether an item is spoiled or contaminated, throw it out
- Undamaged, commercially-prepared foods in airtight, waterproof cans, jars or pouches that remain sealed or are unopened are safe to use if you follow these procedures before opening:
  1. Remove the labels on cans or pouches as they may have come into contact with dirt or bacteria
  2. Brush or wipe away any visible dirt or silt
  3. Thoroughly wash the cans, jars or pouches with soap and water that is safe for drinking
  4. Sanitize the cans with a mild bleach and water solution – 5 mL (1 teaspoon) of bleach per 750 mL (3 cups) of water – or in boiling hot water
  5. Air dry the cans, jars and pouches to prevent potential contamination when they are opened
  6. Relabel the cans, jars and pouches, including the best before date, with a permanent marker
- If the flood causes a power outage, keep your fridge and freezer closed as much as possible. An unopened fridge will keep food cold for four hours. Food in the freezer can last up to 24 hours if the freezer is half full and up to 48 hours if it is full
- Do not eat food that spoils quickly if it has been at temperatures above 4°C (40°F) for over two hours

- Typical symptoms of food-borne illness include sudden onset of stomach cramps accompanied by diarrhea, nausea, fever, chills, headache and vomiting. If you experience any of these symptoms, seek medical attention

## PREVENT MOULD

Prolonged exposure to mould can have a negative impact on both respiratory and cardiovascular health. Health effects include eye, nose and throat irritation; symptoms of asthma; allergic reactions and heart failure. Follow these tips to prevent mould growth:

- Immediate action is important. Mould will begin to grow within 48 hours
- Check for mould anywhere that is damp and especially where water damage has occurred
- Look for signs of mould, leaks or excessive moisture, such as stains or discolouration on floors, walls, window panes, ceiling tiles, fabrics and carpets
- Drywall and ceiling tiles that have been wet for prolonged periods should be discarded as there is a greater chance they may have mould growing on them
- Always wear boots, rubber gloves and a face mask when cleaning mould
- Scrub small areas of mould with water and mild detergent immediately. Dry the area quickly and completely. Open windows and doors to provide plenty of fresh air
- Individuals with known mould allergies or asthma should not clean or remove mouldy materials
- Homeowners should consult a professional for help with cleaning areas of mould greater than one square metre

## Clean and disinfect

Flooding can pose a potential health risk to homeowners because bacteria and other microorganisms may live in the remaining debris. It is extremely important to clean, disinfect and replace materials that have been damaged by flooding. Follow these tips to stay safe:

- Assume everything touched by floodwater has been contaminated and must be cleaned and disinfected or thrown away. If the material is replaceable and cannot be thoroughly cleaned and rapidly dried, it should be replaced
- Wear boots, rubber gloves and a face mask when cleaning. Afterwards, wash hands with soap and clean water. If soap and water are not available for hand washing, use hand sanitizer
- Discard items that cannot be washed and disinfected, such as mattresses, carpeting, carpet padding, rugs, upholstered furniture, cosmetics, stuffed animals, baby toys, pillows, foam-rubber items, books, wall coverings and most paper products
- Thoroughly clean all hard surfaces, such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures with hot water and laundry or dish detergent and then disinfect using a bleach solution
- Floors, walls, children's toys and other surfaces or items that can be cleaned and disinfected should be first washed with hot water and detergent and then disinfected using a bleach solution
- Children's toys should be disinfected and rinsed thoroughly with bottled water after disinfection
- Surfaces that come into contact with food (such as countertops, pantry shelves and fridge shelves) should be carefully disinfected with a bleach solution
- Dry clean or wash all linens and clothing in hot water

## Use undiluted household bleach (5.25 per cent) when preparing a solution

Bleach water recipes (add bleach to water):

- Mix two cups (500 mL) of bleach with 18 cups (4.5 L) of water OR
- Mix one cup (250 mL) of bleach with nine cups (2.25 L) of water OR
- Mix five tablespoons (25 mL) of bleach with approximately one cup (225 mL) of water

Never mix bleach with ammonia or other household cleaners. Mixing bleach with ammonia products will produce dangerous toxic fumes.

For more information on this or any other health-related topic, contact York Region Health Connection at 1-800-361-5653; TTY 1-866-512-6228 or visit [york.ca/health](http://york.ca/health)

## MORE RESOURCES

- [Government of Canada: Get Prepared](#)
- [Canada Mortgage and Housing Corporation: About Your Home – Fighting Mold: The Homeowner’s Guide](#)
- [York Region Emergency Management: York Region’s Emergency Preparedness Guide](#) (Floods, page 25)
- [Conservation Ontario: Flood and Erosion Management](#)

## FLOOD WARNING FORECAST/NOTICE/WARNING INFORMATION

- [Government of Canada: Public Weather Alerts](#)
- [Province of Ontario’s Flood Forecasting and Warning Program](#)
- [Lake Simcoe Region Conservation Authority \(LSRCA\)](#)
- [Toronto Region Conservation Authority \(TRCA\)](#)