

# Flooding guidance



In relation to flooding, the main risk relates to injuries caused by hidden dangers under the water such as missing manhole covers or people falling into fast flowing waters. The risk of contracting illness is generally low. However, as it is not always clear whether water is contaminated or not, the public are urged to exercise caution and assume that floodwater is contaminated.

The stress and strain of being flooded and cleaning up can have a notable impact on mental health and wellbeing. There is also a serious danger posed by carbon monoxide fumes from the indoor use of generators and dehumidifiers to dry out buildings, if they are not properly ventilated. Infections arising as a result of floodwaters in this country are rare as harmful microbes in floodwater usually become very diluted. There are, however, a number of precautions you can take, and more detailed information is listed in **Frequently asked health questions**.

The floodwater affecting your home or other property may have been contaminated with sewage, animal waste and other contaminants and often leaves a muddy deposit. However, experience from previous flooding and sewage contamination has shown that any risk to health is small. Booster immunisations or antibiotics are not usually required. Although harmful gut bacteria such as *E. coli* O157 may be present in sewage and animal slurry and can pass into floodwater, there is likely to be substantial dilution and therefore the risk to health is low.

There are a few precautions to be aware of when dealing with flooding, which should help prevent additional health problems:

- Health risks can be minimised by taking general hygiene precautions and by the use of protective clothing (waterproof boots and gloves) while cleaning up.
- Always wash your hands with soap and clean water after being in contact with floodwater, sewage or items that have been contaminated by these, or after participating in flood clean-up activities.
- Don't allow children to play in floodwater areas until they have been cleaned up or for about a week after the floodwater has cleared completely (after which sunlight and soil help destroy harmful bacteria and any excess risk to health should disappear). Wash children's hands frequently (always before meals). Wash floodwater-contaminated toys with hot water or disinfect before allowing them to be used.
- Keep any open cuts or sores clean and prevent them being exposed to floodwater. Use waterproof plasters.
- Both physical stress associated with over-exertion in cleaning up premises and mental stress caused by temporary relocation may make you feel unwell. Indeed, the major health hazard of floods comes from all the stress and strain of the event, not infection.
- If you or a family member develops a stomach upset following flooding, you should contact your GP practice for advice.

## If the inside of your home is affected

- Remove dirty water and silt from the property including the space under the ground floor if you have wooden floors. This space may need pumping out.
- Clothing, bedding and other soft/fabric articles including children's toys etc should be laundered on a hot wash (60°C or the highest temperature indicated on the manufacturer's instructions) which will destroy most germs that may be present. Other soft furnishings that have been contaminated and cannot be put in a washing machine will have to be professionally cleaned or, if this is not possible, may have to be disposed of.
- All hard surfaces should be washed down with hot soapy water until they look clean.
- Allow to dry thoroughly – this will also help destroy germs left behind.
- Heating and good ventilation will assist the drying process.
- If the floodwater contained oil, diesel etc, this should in the main be removed with the floodwater and silt. Any remaining contamination in accessible areas can be removed by using a detergent solution and washing the surface down after initial cleaning has been carried out. In inaccessible areas such as under floorboards, it may present an odour problem but is not necessarily a health hazard. Further advice should be sought from the environmental health department of your local council if the odour persists or if you are particularly concerned about it for other reasons.

## Returning to your home

It is recommended that you fully re-occupy your home only when all the necessary cleaning has been carried out. There may be additional work to be carried out eventually as advised by your insurance company, housing officer, landlord, builder etc.

Assistance for vulnerable and elderly people to return to their homes may be available from various other agencies including your local council, the Housing Executive and your local Health and Social Care Trust.

## Food preparation and storage

- Don't eat any food that has been covered by or has come into contact with floodwater.
- Ensure all surfaces that food will come into contact with are sound and disinfected. If worktops and other areas show signs of damage, avoid food contact with these areas. In particular, make sure shelves, including those in your refrigerator where food is stored, are cleaned and disinfected.
- Food preparation surfaces should be wiped down using hot tap water containing washing-up liquid, and dishes and other utensils should also be washed in hot tap water containing washing-up liquid.
- Frozen food that has been at ambient temperature for a few hours should be disposed of. Put contaminated flood-damaged food in black plastic refuse sacks, seal them and put out when your next refuse collection is due. Check with insurers before disposal. Don't be tempted to salvage damaged food, including tins, as they may be contaminated with sewage and chemicals left from the floodwater.
- Caterers should seek detailed advice from environmental health officers (EHOs).

## Frequently asked health questions

### What's the best health advice – isn't there a risk from germs in the water?

Infection problems arising from floods in this country are rare. Any harmful germs in floodwater usually become very diluted and present a low risk, but there are a few precautions to be aware of when dealing with flooding, which should prevent unnecessary additional health problems.

- Wherever possible, try to avoid coming into direct contact with floodwater. If you have to go into the water, wear waterproof gloves and rubber boots and remember to be careful of potentially concealed hazards.
- Wash your hands – this is the most effective way to get rid of harmful germs. Use warm, clean water and soap, then rinse and dry your hands after being in contact with floodwater, sewage or with items that have been in the water. Use cold water to wash if warm is not available. If there is no clean water, use disposable soapy, wet wipes to carefully clean all parts of your hands and dry them.
- Use waterproof plasters to keep open cuts or sores clean.
- Keep children out of the water.
- Don't eat any food that has been touched or covered by floodwater or sewage.

### What if I start to feel unwell?

If you feel unwell after flooding, this does not necessarily mean you are suffering from an infection. If you are concerned, contact your GP.

You should contact your GP if you become ill after accidentally swallowing contaminated water or mud, and tell the doctor your house was flooded.

Both the physical stress associated with over-exertion in cleaning up premises and the mental stress caused by temporary relocation may make you feel unwell. Remember that tiredness, difficulty sleeping and anxiety are normal in these circumstances and may go away with time. If you're feeling overwhelmed, contact friends, relations or your GP. And keep warm – cold can lead to hypothermia.

### How do I check if my local health services are affected (eg GPs, outpatient clinics)?

If you can, use the usual local telephone numbers for your health services.

### Should I take any precautions regarding my children?

- Do not allow children to play in floodwater areas.
- Do not let young children play on affected paved or concreted areas until they have been cleaned down and restored to their normal condition. Sunlight and soil help destroy harmful bacteria so it is usually safe for children to play on grass a week or so after the floodwater has gone.
- Wash children's hands frequently – particularly after playing outdoors and always before meals.
- Seek medical advice, as under normal circumstances, if infants are unwell with diarrhoea and vomiting.
- Wash floodwater-contaminated toys with hot water and detergent before allowing them to be used. For soft toys, put them in a hot (60°C) machine wash, along with any other affected fabric items.

## Is food safe to eat?

The Public Health Agency (PHA) advises people not to eat any food that has been touched or covered by floodwater or sewage

Do not eat any produce grown on an allotment or garden that has been flooded, unless it has been cooked.

If you have a catering business and have been affected by flooding, ask for advice from local council EHOs.

## How do I prepare food safely?

Wash your hands before and after preparing food. Using clean water, detergent, then a normal kitchen disinfectant, clean and disinfect work surfaces, plates, pans, cutlery, and plastic/glass chopping boards before preparing food. Powerful disinfectants, such as strong bleach, are not necessary and may be harmful to surfaces.

Throw away wooden chopping boards that have been in contact with floodwater or sewage. If you have a working dishwasher and mains water supply, this is a more efficient way to clean smaller items.

Using detergent, water and normal household cleaning products, thoroughly clean the inside of your fridge and food cupboards if they have been touched by floodwater.

If your power has been cut off and your fridge has not been working for a few hours, throw away the food inside. If your freezer has not been working, throw away any meat, fish or dairy products, or food containing these, if they have started to go soft or are contaminated by floodwater. Throw away any food you would eat frozen, such as ice cream.

## What about commercial kitchens?

The *Industry guide to good hygiene practice*, available at [http://archive.food.gov.uk/dept\\_health/pdf/catsec.pdf](http://archive.food.gov.uk/dept_health/pdf/catsec.pdf) indicates what should be disinfected and what does not normally need to be. Disinfection in normal situations should be restricted to:

- direct food contact surfaces including worktops and equipment;
- hand contact surfaces such as doors;
- cleaning materials such as cloths, bowls and brushes.

If the food preparation area has been flooded, it will be necessary to thoroughly clean it and this should include disinfection.

Caterers should seek detailed advice from local council EHOs.

## What should I do with flood-damaged food?

Put flood-damaged food in black plastic refuse sacks, seal them and put out when your next refuse collection is due.

Remember to check with insurers before disposal because food may be insured. Don't be tempted to salvage damaged food, including tins, as they may be damaged or contaminated.

## How should I clean up my home safely?

### Protective clothing

Wear rubber boots, an apron and waterproof gloves during the clean-up. If you are scrubbing, hosing or pressure-washing, you may cause a lot of splashing and it is a good idea to wear a standard face mask, such as those sold by DIY stores. Goggles offer added protection and they can be reused after thorough washing. Remember to wash your hands thoroughly after each clean-up session.

## Electrics

You should not switch on electrical appliances that have been in contact with floodwater unless a competent electrician has checked them, as there is a risk of electrocution.

## Children

Keep children and pets out of the affected area until the clean-up has been completed. Even when dried out, be aware that damaged timber floorboards and floor tiles may present a risk of injury to the young.

## How and what to clean

- Using clean water, detergent, then a normal kitchen disinfectant, clean and disinfect work surfaces, plates, pans, cutlery and plastic/glass chopping boards before preparing food. Powerful disinfectants, such as strong bleach, are not necessary and may be harmful to surfaces.
- Thoroughly clean all other hard surfaces, including walls, hard-surfaced floors and furniture with hot soapy water, using an ordinary household detergent, until they look clean. Allow to dry thoroughly – this will also help destroy germs left behind.
- Other soft furnishings that have been contaminated and cannot be put in a washing machine will have to be cleaned professionally or, if this is not possible, may have to be disposed of.
- Do not mix detergents with chlorine-based bleaches as this may release hazardous fumes.
- Remember to take regular breaks in the fresh air.
- Remove and discard all soft furnishings and fittings that are damaged beyond repair or mouldy.

- Remove dirty water and silt from the property including the space under the ground floor if you have wooden floors. This space may need pumping out.
- If you need to store water, try not to use the same containers used to empty flood water and mud from your home.
- Heating and good ventilation will assist the drying process. Use fans, air conditioning units and dehumidifiers, but be very aware of the danger of carbon monoxide poisoning (see below).

## Clothing and bedding

These and other soft/fabric articles including children's toys etc should be laundered on a hot wash (60°C or the highest temperature indicated on the manufacturer's instructions) which will destroy most germs that may be present.

Heavily contaminated clothes can be soaked first to avoid grit damaging the washing machine. Contaminated clothes should be machine washed separately from uncontaminated clothes.

If you suspect problems with your drainage system, it is recommended that a launderette be used for washing large quantities of clothes and linens until your waste-water system has been checked.

## Insurance

If items are likely to be the subject of insurance claims, speak to insurers and find out what evidence your claims will require. In the interim, we recommend that affected items are moved and stored in areas away from those that are used for day-to-day living.

## Living in your flood-damaged home

It is recommended that you fully re-occupy your home only when all the necessary cleaning has been carried out. There may be additional work to be carried out eventually as advised by your insurance company, housing officer, landlord, builder etc.

If you decide to return to your home before this further work is completed, you should:

- try to have some heating on at all times, once it has been safety checked;
- consider the use of a dehumidifier;
- ensure the property is well ventilated;
- leave windows open as much as possible but be mindful of security.

If you have air-bricks to any under floor spaces, ensure these are unblocked to give cross-ventilation to these areas. As floorboards and walls continue to dry out, any loose material and dust resulting from this should be vacuumed up on a regular basis.

## Mould

You may notice mould growing on damp walls. This should disappear as your home dries out. Areas where mould remains can be cleaned with warm water and detergent. If specialist treatment is necessary for persistent mould, this should be carried out by a skilled operator who will use appropriate protective equipment and precautions. You should not attempt to do this yourself.

## Rats and other pests

Rats can move into homes due to flooding of their nests, but they are generally wary of humans. If normal waste collection services are disrupted, the build-up of waste may attract rats and other

pests. Store your rubbish in hard bins or if this is not possible, try to keep rubbish bags in a place away from your home.

Avoid approaching or cornering rats. If you are bitten by a rat, seek medical advice. If you have to pick up dead rats, wear gloves and dispose of the rats in a plastic bag.

## What are the chemical hazards involved in floods and cleaning up?

### Carbon monoxide poisoning

Remember that petrol or diesel generators and dehumidifiers should never be used indoors without good ventilation. Keep doors and windows open whenever possible. The exhaust gases contain carbon monoxide, which can quickly build up to poisonous levels without good ventilation.

The same risk is carried by portable grills, pressure washers, camp stoves, paraffin-fuelled heaters or other devices using gasoline, propane or natural gas. These devices should not be used indoors for heating or boiling water or cleaning.

If you have to use these devices to boil water, this should be done outdoors. If you cannot use these devices outdoors and there are no other alternatives, they should only be used to boil water for as short a period as possible in well ventilated rooms. They should never be used to heat or dry out rooms. If you experience dizziness, headaches or disorientation, switch the appliance off, move to a well ventilated area and seek medical advice.

### Car batteries

Older batteries may leak acid, so it is advisable to use rubber gloves when handling them.

## Household chemicals

Special care should be taken when opening cupboards that may contain household or garden chemicals that have become wet, especially those in bags or cardboard packaging. Wear rubber gloves to handle any of this packaging.

## Oil in floodwater

Oil films may be seen floating on the floodwaters both inside buildings and in surrounding areas. It is recommended that these films should not be disturbed and exposure to them should be avoided. Floodwaters should be allowed to subside and on contact with the ground the petrol allowed to evaporate. As is normal practice, people are reminded not to smoke or have fire sources such as matches in the vicinity of petrol films.

Any remaining oil contamination in accessible areas can be removed by using a detergent solution and washing the surface down after initial cleaning has been carried out. In inaccessible areas such as under floorboards, it may present an odour problem but is not necessarily a health hazard. Further advice should be sought from local council EHOs if the odour persists or if you are particularly concerned about it for other reasons.

## Enclosed areas

Avoid enclosed areas that may be chemically contaminated, such as garages and cellars where hazardous fumes may build up. Before entering, ensure such confined areas have good ventilation, with doors and windows open, and do not allow children and animals to enter.

## Gas systems

Water and mud may enter gas systems during a flood. Even if appliances appear to be working normally, the flue or ventilation systems may be affected. For safety

reasons, it is most important to have all appliances inspected by a registered engineer.

## Cleaning up where chemical contamination is suspected at home

Although any chemicals in floodwater will have been very diluted and present a low risk, as with sewage contamination, you should always wear protective clothing – rubber boots, an apron and waterproof gloves.

If you are scrubbing, hosing or pressure-washing, you may cause a lot of splashing and it is a good idea to wear a standard face mask, such as those sold by DIY stores. Goggles offer added protection and they can be reused after thorough washing. Remember to wash your hands thoroughly after each clean-up session.

## Who is responsible for the safety of my mains water supply?

People whose water comes through a mains supply should follow the advice of NI Water regarding the safety of their water supply. In most flooding circumstances, the mains water supply remains safe.

NI Water has a duty to take all necessary steps to protect public health. If a water treatment works becomes flooded, consumers may be advised to boil water before drinking or, in exceptional cases, not to use it until further tests have been completed.

## My mains water tastes funny – what should I do?

If you notice a change in water quality, such as the water becoming discoloured or there is a change in taste or smell, or if you are just unsure, ring NI Water. While waiting for an answer, and if water is urgently required, boil all water intended for drinking or use bottled water.

## How do I use tap water that may be contaminated?

The quality of mains supply tap water is the responsibility of NI Water. Usually in a flood, the water supply and distribution network are unaffected and so it is safe to drink the water. If for any reason it is not safe to drink, NI Water will inform you.

If there is evidence or concern that the tap water may be contaminated, boil and cool it before using it to wash food that won't be cooked, such as fruit or salad. It is safe to use unboiled tap water in the preparation of food that is to be cooked. It is also safe to use unboiled tap water for cooking if it will be boiled during the cooking process.

## I have been advised to boil my mains water – what do I need to know?

If you have been advised to boil your water before use, this will be for drinking and food preparation. All water for these purposes should be brought to a boil and then allowed to cool before using. Remember that boiling water can carry a risk of scalding accidents. It is advisable to use a kettle rather than pots and pans. If you must use open containers such as pots and pans, special care should be taken when young children or vulnerable people are involved. Keep pan handles turned inwards when boiling water so that children cannot reach them.

Water from the hot tap is not suitable for drinking whether in flood circumstances or not.

## If I don't have mains water how should I bottlefeed my baby?

If your drinking water supply is either interrupted or contaminated by the flooding and you need to prepare formula feed for a baby, it is important to be careful with the water you use. Here are

some tips from the Food Standards Agency on preparing formula safely:

- Ideally use water from a bowser or bottled water, brought to a 'rolling' boil and left covered to cool for no more than half an hour, then follow the manufacturer's instructions on making up the feed. The use of unboiled bowser water should be avoided.
- Use cooled boiled water or bottled water for cooling the feed once it has been made up. Ready-to-feed liquid formula could be used instead.
- If there is no electricity or gas to allow boiling and you don't have ready-to-feed liquid formula available, bottled water (table, spring or mineral water) can be used without boiling to prepare baby feeds, but the prepared feed should then be used immediately.
- Some natural mineral water may have a high sodium content. Look at the label for sodium or 'Na' and check its level is not higher than 200mg a litre. If it is, then try to use a different water. If no other water is available, use this water for as short a time as possible. It is important to keep babies hydrated.

## What if my water comes from a private supply?

If your water is a private supply such as a well or spring, check that it has not been affected by the floodwater. If a private well or spring has been covered by floodwater, if the water changes colour, taste or smell, or if you believe the supply has been affected by the flood, then ring your local council for advice. While waiting for an answer, assume the water is unsafe to drink unless boiled or source an alternative supply.

Continue to boil the water until the supply has

been tested and shown to be safe. Boiling water kills pathogenic bacteria, viruses and parasites that may be present, but not harmful chemicals.

Bring the water to the boil and then allow it to cool before drinking. Don't store large quantities of boiled water in open containers, such as bins, as they may become contaminated over time.

### **How do I clean water containers (bowls, buckets etc) that have been in the floodwater?**

Use an appropriately diluted bleach solution or sterilising tablets, following the manufacturer's instructions, to clean containers. Use water storage tanks and other types of containers with caution. This applies particularly to pans and utensils used in cooking or food preparation.

Ensure water taps are cleaned with hot water and detergent before using them for the first time after a flood. Allow the taps to run for a few minutes when you start using the mains water again, as this should clear the pipes.

### **How should I use bowser and bottled water to replace mains water?**

Only bowser water that has been boiled or bottled water should be used for drinking (please note advice regarding bottle-fed infants), brushing teeth, washing food, cooking and making ice.

If there is no gas or electricity available to boil water, bottled water should be used in all circumstances.

### **How do I flush the toilet with no mains water?**

With restrictions in drinking water supply, there may be insufficient water for flushing toilets. It is therefore important that all water used for washing, bathing, and from cooking (ie water from boiled vegetables) or washing up is saved in buckets to be used for flushing. It is not necessary to flush the toilet after urination. Other sources of water, eg garden water butts, can also be used for flushing.

### **How do I bathe my child without mains water?**

If NI Water has advised that the domestic supply is unsafe for drinking, then it is inadvisable to use this for bathing infants. In this situation, boiled bowser water or bottled water are safe alternatives. A safe alternative to bathing is to use baby wipes for hand cleansing and washing infants.

### **Can I use water for my contact lenses?**

Tap water or bowser water should never be used for cleaning or storing contact lenses since this could cause a rare but serious eye infection.

#### **Further information on flooding is available from:**

Belfast City Council

[www.belfastcity.gov.uk/flooding/index.asp](http://www.belfastcity.gov.uk/flooding/index.asp)

NI Water

[www.niwater.com/major-incident-details.asp](http://www.niwater.com/major-incident-details.asp)

NI Direct

[www.nidirect.gov.uk/index/newsroom/news-june12-government-services-affected-by-flooding.htm?WT.ac=Home-Slider-1](http://www.nidirect.gov.uk/index/newsroom/news-june12-government-services-affected-by-flooding.htm?WT.ac=Home-Slider-1)

Health Protection Agency

[www.hpa.org.uk/Topics/EmergencyResponse/ExtremeWeatherEventsAndNaturalDisasters/](http://www.hpa.org.uk/Topics/EmergencyResponse/ExtremeWeatherEventsAndNaturalDisasters/)