



Health and Safety after Floods

This document contains general guidance; however you should consult with your physician and local health department about precautions for your specific situation. Never enter a disaster area until it has been cleared for reentry by emergency responders.

Floodwater is often highly hazardous. It can be contaminated with sewage or industrial waste, and/or bacteria and other biological agents. Mold is also usually present after floods. These factors pose significant health risks. Never respond to flood incidents if you are immune-compromised or have chronic lung disease, asthma, or any other condition that might be exacerbated by the hazards present in flooded areas. Keep contact information for emergency response personnel readily available, especially when communications are still impacted by the flood.

Floodwater and Its Hazards

Floodwater can contain any and all of the following: infectious organisms, fuels, industrial or agricultural chemicals (including heavy metals), and mosquitos, which carry disease. Assume all floodwaters and anything that is wet with floodwater is contaminated. Snakes, alligators, and rats are also often found in floodwater, so exercise caution at all times.

Assume all water is hazardous until local authorities deem it safe. Bottled water is your safest option for drinking. Water contaminated with fuel or other chemicals will not be made safe by boiling or disinfection.

Mold

According to the Centers for Disease Control, "some people are sensitive to molds. For these people, molds can cause nasal stuffiness, throat irritation, coughing or wheezing, eye irritation, or, in some cases, skin irritation. People with mold allergies may have more severe reactions. Immune-compromised people and people with chronic lung illnesses, such as obstructive lung disease, may get serious infections in their lungs when they are exposed to mold."

(https://www.cdc.gov/mold/dampness_facts.htm)

Mold can be removed from hard surfaces using a solution of 1 cup of bleach to 1 gallon of water.

Protect Yourself

Waterproof gloves are crucial safety equipment. Nitrile gloves are usually acceptable, however if there are hazardous chemicals in the water, nitrile may not provide enough protection and you may need heavy-duty gloves. If using nitrile gloves, consider double gloving when working with sharp objects that may tear your gloves.

Wash your hands with soap and CLEAN, running water, whenever you remove gloves, but especially before breaks, meals, and the end of the work shift. If you have any open cuts or sores that were exposed to floodwater, wash them with soap and water and apply an antibiotic ointment to discourage infection. Seek medical attention for cuts that become infected.

Wear Personal Protective Equipment (PPE) at all times when in floodwater-contaminated areas, including a tight-fitting respirator with a HEPA filter, head protection, splash goggles, Tyvek outer clothing, and watertight boots.

If water is suspected to contain hazardous chemicals, wear chemical-resistant outer clothing (Tyvek) and goggles (NOT safety glasses). Wear rubber or plastic boots and plastic (PVC rubber or nitrile) gloves, and consider duct taping protective clothing openings to keep water out. A respirator with chemical AND particulate cartridges is the best respiratory protection.

Keep exposed skin to a minimum: wear long-sleeved shirts, long pants, and insect repellent to keep from being bitten by mosquitos and other insects.

Symptoms of Floodwater-Borne and Mold-Related Illnesses

Symptoms from infectious bacteria and viruses will often be similar to food poisoning: nausea, vomiting, diarrhea, abdominal cramps, muscle aches, and fever.

Symptoms from exposure to chemicals may vary depending on the chemical, but often exposure manifests itself in headaches, skin rashes, dizziness, nausea, excitability, weakness, and fatigue.

Symptoms from exposure to mold may include nasal stuffiness, throat irritation, coughing, wheezing, eye irritation, and skin irritation.

If at any time these or other unexplained symptoms develop, seek medical attention immediately.

Resources

- AIC Health and Safety Committee: Health and Safety in Emergency Response.
http://www.conservation-wiki.com/w/images/9/92/H%26S_Health_%26_Safety_in_Emergency_Response_2016.pdf
- American Industrial Hygiene Association (AIHA): Health and Safety Issues in Natural Disasters. https://www.aiha.org/government-affairs/PositionStatements/AIHA_IH_Disaster%20FinalJuly72017.pdf
- CDC. Clean Up Safely After a Disaster:
<https://www.cdc.gov/disasters/cleanup/facts.html>
- Drycleaning and Laundry Institute: Flood Damage Cleaning Fact Sheet:
<http://www.dlionline.org/Flood-Damage-Fact-Sheet>
- Occupational Safety and Health Administration (OSHA) FactSheet: Flood Cleanup:
www.osha.gov/OshDoc/data_Hurricane_Facts/floodcleanup.pdf
- Housing and Urban Development (HUD): Mold: Worker and Employer Guide to Hazards and Recommended Controls:
https://portal.hud.gov/hudportal/documents/huddoc?id=IEPWG_mold_worker.pdf
- Environmental Protection Agency: Mold and Health:
<https://www.epa.gov/mold/mold-and-health>