

Floodwater Facts for Volunteers

For more information about this fact sheet, contact Risk Management at:
Salt Lake area: 801-240-4049
All other areas: 1-800-453-3860, ext. 2-4049

This fact sheet provides information for volunteers about floodwater hazards and precautions. It has been adapted from the United States Department of Labor's Occupational Safety and Health Administration website "Fact Sheets on Natural Disaster Cleanup: Flood Cleanup" and from the Centers for Disease Control and Prevention website "Flood Waters or Standing Waters."

Introduction

Flooding can disrupt water purification and sewage disposal systems and can also carry hazardous chemicals from agricultural and industrial sites. In addition to the risks of contaminated water, mosquitos and other animal vectors can also spread disease during floods. Although most floods do not cause serious outbreaks of infectious disease or chemical poisonings, they can cause sickness in cleanup volunteers who are exposed to these disaster conditions. Flooded areas may also pose electrical or fire hazards connected with downed power lines. Volunteers should take steps to minimize potential risks and should know how to respond in case of illness or injury.

Floodwater Hazards

Floodwater often contains infectious organisms from sewage, including bacteria such as *E. coli*, *Salmonella*, and *Shigella*; *Hepatitis A virus*; and agents of tetanus. The signs and symptoms experienced by victims of waterborne microorganisms are similar, even though they may be caused by different pathogens. These symptoms include nausea, vomiting, diarrhea, abdominal cramps, muscle aches, and fever. Most cases of sickness associated with flood conditions are brought about by ingesting contaminated food or water. Tetanus can be acquired from contaminated soil or water entering broken areas of the skin, such as cuts, abrasions, or puncture wounds.

Flood cleanup volunteers who work near flooded agricultural or industrial sites may also be exposed to chemically contaminated floodwater. Although different chemicals cause different health effects, the signs and symptoms most frequently associated with chemical poisoning are headaches, skin rashes, dizziness, nausea, excitability, weakness, and fatigue.

Animals that transmit disease, especially mosquitos, can be another potential risk during flood cleanup. Pools of standing or stagnant water become breeding grounds for mosquitoes, increasing the risk of encephalitis, West Nile virus, or other mosquito-borne diseases. The presence of wild animals in populated areas increases the risk of diseases caused by animal bites (such as rabies) as well as diseases carried by fleas and ticks.

Downed power lines in the area can pose a serious electrical hazard and warrant extreme caution. Downed power lines can also cause fires or even explosions if flammable chemicals are present. Flammable chemical hazards, such as propane tanks, should be handled by the fire department or police.

Protection from Floodwater

The most basic way volunteers can protect themselves is to maintain good hygiene, though this is often difficult during cleanup work. To avoid waterborne disease, it is important to wash hands with soap and clean, running water, especially before breaks or eating and at the end of cleanup work. Volunteers should assume that any water in flooded or surrounding areas is not safe unless the local or state authorities have specifically declared it to be safe. If no safe water supply is readily available for washing, use bottled water, water that has been boiled for at least 10 minutes, or chemically disinfected water. (To disinfect water for washing, add one-eighth teaspoon, or eight drops, of unscented liquid household bleach to each gallon of water, and then let the water sit for at least 30 minutes before use.)

Wearing proper protective gear and clothing is also important. Before entering floodwater, volunteers should don PVC or nitrile (not disposable or latex) gloves, rubber boots, goggles or safety glasses, and other protective gear or clothing needed to avoid contact with floodwater. Wearing long-sleeved shirts and long pants and using insect repellants can decrease the risk of mosquito and other insect bites.

What to Do If Symptoms Develop

If a cleanup volunteer experiences any of the signs or symptoms listed above, the volunteer should seek appropriate first-aid treatment and medical advice. If the skin is broken, particularly with a puncture wound or a wound in contact with potentially contaminated material, a tetanus vaccination may be needed if five years or more have passed since the individual's last tetanus shot.

Tips to Remember

- Wash hands with soap and clean water before breaks or eating and at the end of cleanup work.
- Keep an adequate supply of safe water available for washing and potable water for drinking.
- Be alert for chemically contaminated floodwater near agricultural and industrial sites.
- Use extreme caution around electrical and potentially flammable hazards.
- Wear PVC or nitrile (not disposable or latex) gloves, rubber boots, and goggles or safety glasses during floodwater cleanup.
- Be aware of open wounds and rashes that could become infected if exposed to floodwaters. To protect yourself:
 - Avoid exposing open wounds to floodwater.
 - Cover open wounds with a waterproof bandage.
 - Keep open wounds as clean as possible by washing with soap and clean water.
 - Seek immediate medical care if a wound develops redness, swelling, or infection.
 - Seek immediate medical care for open wounds acquired during floodwater cleanup work; a physician may prescribe a tetanus immunization.
 - Seek immediate medical care for animal bites.

References

www.osha.gov/OshDoc/floodCleanup.html

www.cdc.gov/healthywater/emergency/flood/standing.html

water.epa.gov/drink/emereprep/emergencydisinfection.cfm

Floodwater Facts for Volunteers Fact Sheet, page 2 of 2