



Water Works

Information for Older Adults and Family Caregivers

Older adults are considered especially vulnerable to waterborne contaminants. Persons living with HIV and those with those with compromised immune systems are also at greater risk.

Water is essential to our lives. We use it for drinking, cooking, bathing, cleaning, and growing crops. Because water is so integral to our daily activities, it is important for consumers to know when it is safe.

Water, if contaminated, can harm our health especially that of older persons and those with chronic conditions. Persons living with HIV and those with those with compromised immune systems are also at greater risk.

Environmental contaminants can be encountered in drinking water and during recreational activities such as swimming. Contact with water pollutants can also occur when sewers overflow. You can protect your health by learning how you can reduce or eliminate exposure to contaminants in water.

Tap Water in the Home

Although most drinking water is safe, incidents of contamination can and do occur. Pollutants that may be present in the water include chemicals such as radon, and lead, bacteria and viruses. This section describes some of the potential problems you can find in your household tap water.

Microbes:

Bacteria and viruses are known as microbes. They are present in drinking water but most are not harmful. Occasionally drinking water may contain disease-causing microbes in particular those microbes that cause gastrointestinal illness. Usually our bodies' protective barriers and immune systems prevent them from causing disease. However, due to

the decline of the human immune system with age and changes in the protective barriers in the gastrointestinal functions, older adults are particularly susceptible to microbial illnesses. Gastrointestinal (GI) pathogens found in drinking water include parasites, such as *Cryptosporidium* and *Giardia*, bacteria such as *E. coli*, *Salmonella* and *Shigella*, and viruses such as Norwalk. About 211 million episodes of GI illnesses occur each year in the US¹.

Lead:

Long-term exposure to lead can cause health problems in the nervous system. Lead can contribute to high blood pressure, nerve disorders, memory and concentration problems, and muscle and joint pain. Lead accumulates and is stored in our bones. During menopause, as bones start to break down, lead may be released from the bone, resulting in high blood lead levels. Even if your household water is provided by a public utility, lead may be present due to corrosion of household plumbing systems or the presence of lead service lines.

Arsenic:

There is evidence that long-term exposure to high levels of arsenic can cause cancer, increase cardiovascular problems and elevate diabetes rates. Arsenic contamination is either naturally occurring (part of the local geology) or occurs as the result of industrial or agricultural practices that involve land application of arsenic containing chemicals. EPA has a standard for public drinking water systems to ensure that people are not exposed to high levels of arsenic. However, the standard does not cover private wells, systems with fewer than 15 "hook-ups" or serving 25 people. If

¹ Mead PS, Slutsker L, Dietz V, McCaig LF, Bresee JS, Shapiro C, Griffin PM, Tauxe RV. Food-Related Illness and Death in the United States. *Emerging Infectious Diseases*, 1999; 5(5):607-625

Dehydration

Older adults can be at risk for dehydration because as people age the thirst sensation decreases and they do not feel the urge to drink as often as when they were younger. They may also take medications that increase the risk of dehydration or have physical conditions that make it difficult to drink. Exposure to microorganisms in water can make people sick, and may cause diarrhea increasing the risk of dehydration.

Signs of dehydration include:

- Dry or sticky mouth
- Low or no urine output; concentrated urine appears dark yellow
- Lack of tear drops
- Sunken eyes
- Lethargic or comatose (with severe dehydration)

Because dehydration can be life threatening, drink plenty of water each day. If you have decreased your tap water intake because you do not like the taste or are concerned for its quality, you should treat it or find an alternative source of water until the problem is resolved.

your drinking water comes from a well or a small system, you may want to test it for arsenic.

Radon:

Radon gas is the second leading cause of lung cancer in the US. Nearly 1 in 15 homes is estimated to have high levels of radon. Radon is especially dangerous because it is odorless and invisible. Radon naturally occurs in rock, soil and water. If your household water comes from a well, radon can be released into the air while showering. If your home has high levels of radon, well water may be one of its sources.

How Can I Avoid Water-Related Hazards?

The most important step is to be aware of advisories issued by your local health department or department of environment and abide by their advice. Learn about your water and whether you should test for certain contaminants.

- **Learn About Your Drinking Water:** If your water comes from a public water system, it must meet EPA standards. Counties are required to provide users with records of testing. Check your water provider's annual water quality report, also called a consumer confidence report or call your water provider to find out whether you need to be concerned about certain types of pollution. If you live in an apartment building, ask the manager to post the consumer confidence report in a public location. If your water comes from a well, it is not subject to EPA standards. Your household should take special precautions, such as annual testing, to ensure that your water is safe.
- **Follow Public Notices on Drinking Water:** Your water supplier is required to issue a notice by newspaper, radio, TV, mail or hand-delivery if there is a waterborne disease emergency. The notice will describe any precautions you need to take, such as boiling your water or using bottled water. Follow the advice of your water supplier. Boiling water for one minute will normally kill micro-organisms but will not help with chemical contamination.

- **Contact Your Water Supplier to See if You Should Test for Lead:** You cannot see, smell, or taste lead. Call your local health department or water supplier to find out if you should test your water for lead. Do not boil your water. Boiling your water will not rid lead from your water and will actually make the problem worse because the concentration of lead will increase as the water evaporates. If you think your plumbing system might contain lead, use only cold water for drinking and cooking. Run cold water until it becomes as cold as it can get, especially if you have not used your water for a few hours. To find out more, call the National Lead Information Center at (800) 424-LEAD.

- **Test for Radon in the Air of Your Home:** There are many kinds of low-cost, "do-it-yourself" radon test kits that you can purchase through the mail or at hardware stores. You can also have a qualified professional conduct a test. If you have high levels of radon, it may be entering your home through the water or the soil. If your water comes from a public water supply, contact your water supplier. If you have radon in your water from a private well, call EPA's Drinking Water Hotline at (800) 426-4791.

Water-Related Hazards from Swimming

Older adults are encouraged to remain physically active. Most beaches are safe for swimming; however, beach water may contain invisible disease-causing microorganisms. Swimming in contaminated water may result in minor illnesses, such as sore throats or diarrhea. Older adults with weakened immune systems have a greater chance of getting sick from contaminated water.

- **Beach Closures:** States, tribes, and local government health and environmental agencies measure and identify microorganism levels at beaches to see if water meets EPA's standards for health. When microorganism levels are unsafe, agencies post warnings or close the beach. Levels are most likely to be high after storms. It

is important for older adults with health conditions to check and follow beach advisories, because they may be more susceptible to microbes than younger adults.

Water Infiltration Hazards in the Home, Especially after Floods

Inadequate home maintenance is a potential source of exposure to contaminants for older adults. If home repairs are not carried out as needed, excessive moisture or water may accumulate indoors. This can result in mold growth, particularly if the moisture problem remains undiscovered. Mold can cause allergic reactions in sensitive individuals, such as sneezing, runny nose, red eyes, and skin rash (dermatitis) and, in some extreme cases, breathing problems. Contact with water pollutants can occur when there is sewage back-flow into your home. Contact can occur if your waste water drainage pipe is blocked connecting you to the public sewage system or a septic system due to infiltration from tree roots. Sewage backflow is particularly common after catastrophic rain events that lead to flooding.

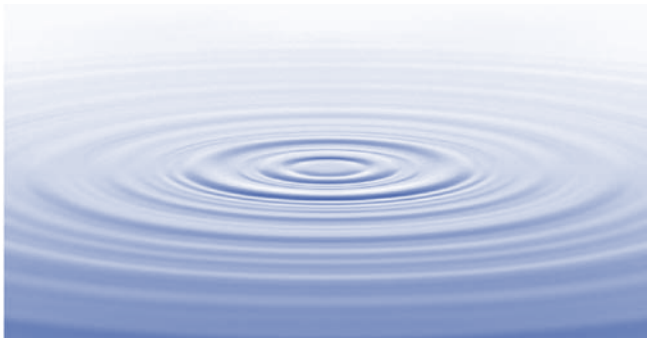
- **Inspect Your Home for Leaks:** Establish a regular program to inspect your home for water leakage problems in bathrooms, the laundry and around windows and doors. Do not neglect the roof gutters and eaves. Look for signs of leakage.
- **Eliminate Water to Eliminate Mold:** Mold needs water to grow. To prevent mold, fix plumbing leaks and other water problems as soon as possible. Scrub mold off hard surfaces with detergent and water and dry completely. To eliminate mold in your home, clean up the mold and eliminate the water source. Some cleaning products are formulated to treat mold growth.
- **After the Flood, Clean Damaged Area:** Floods create health risks. Sewage and other materials can enter your home through flood water. Even when the flood water is

What Should I Do If I Can't Drink My Water?

During spills or temporary treatment problems, you may not be able to drink your water for a short time. People with special health needs or people living in areas of known water contamination may need to consider alternative water sources for the long term.



- **Follow Public Notices on Drinking Water:** Your water supplier is required to issue a notice by newspaper, radio, TV, mail or hand-delivery if there is a waterborne disease emergency. The notice will describe any precautions you need to take, such as boiling your water or using bottled water. Follow the advice of your water supplier. Boiling your water for one minute will normally kill microorganisms but will not help with chemical contamination.
- **Drink Bottled Water:** Some companies lease or sell water dispensers or bubblers and regularly deliver large bottles of water to homes and businesses. Bottled water can be expensive compared to water from a public water system. Bottled water quality varies among brands, because of the variations in the source water used, costs, and company practices. Persons with compromised immune systems may want to read bottled water labels to make sure more stringent treatments have been used, such as reverse osmosis, distillation, UV radiation, or filtration by an absolute 1 micron filter. For more information on whether your bottled water meets FDA standards, check with NSF International (http://www.nsf.org/consumer/bottled_water/ or call 877-8-NSF-HELP).
- **Install a Home Treatment System:** If you have a long-term water problem, home treatment may be necessary. Home treatment can include filters used at the tap or at the connection between the water main and the connection to the house. If radon is a problem, home treatment may be a solution.



clean, standing water and wet materials are a breeding ground for microorganisms. Remove standing water, dry out your home, and remove wet materials. Clean and disinfect the damaged area to reduce your risk of disease. Rugs, curtains, and furniture may need to be replaced if sewage entered your home.

- **After the Flood, Inspect Your Wells:** If you have a private well, do not turn on the pump or use well water for drinking or washing. Talk to your state or local health department to find out what precautions to take.

How Can I Protect My Private Well Water?

Private drinking water supplies are not subject to EPA standards. If your water comes from a well, it is not automatically tested by experts to identify problems. You must take special precautions to ensure the protection and maintenance of your drinking water:

Identify Potential Problems

Identifying potential problems is the first step to safeguarding your drinking water. Start by consulting a local expert such as your local health department, agricultural extension agent, a nearby public water system, or a geologist at a local university. Ask them about problems that may affect the water quality of your well.

Test Your Well Water Every Year

Test your well water every year for bacteria, nitrates, total dissolved solids, and pH levels. If you suspect other contaminants, test for those as well. Many contaminants are colorless and odorless, so you will not be able to tell if you have a problem without a test.

More frequent water tests may be needed when:

- there are unexplained illnesses in the family
- your neighbors find a dangerous contaminant in their water
- you note a change in water taste, odor, color or clarity
- there is a spill of chemicals or fuels into or near your well
- you replace or repair any part of your well system

Prevent Problems

Keep fertilizers, pesticides, herbicides, fuels, and other pollutants away from the well. Take care when working or mowing grass around your well. Contact your local public health department to find out how often you should pump and inspect your septic system. Do not dispose of hazardous materials in septic systems.

How Can I Learn More?

EPA's Aging Initiative is working to protect older adults from environmental health risks through the coordination of research, prevention strategies, and public education. For more information, visit www.epa.gov/aging.

Resources:

Water on Tap: What You Need to Know

<http://www.epa.gov/safewater/wot/index.html>

Arsenic in Drinking Water

<http://www.epa.gov/safewater/arsenic/>

Consumer's Guide to Radon Protection

<http://www.epa.gov/radon/pubs/consguid.html#howenters>

Emergency Disinfection of Drinking Water

<http://www.epa.gov/safewater/faq/emerg.html>

Flood Clean Up

<http://www.epa.gov/iaq/flood/index.html>

Guidance for Persons with Severely Weakened Immune Systems

<http://www.epa.gov/safewater/crypto.html>

After the Flood Info for Private Well Owners

<http://www.epa.gov/safewater/privatewells/whatdo.html>

Mold Resources

<http://www.epa.gov/mold/moldresources.html>

Safe Drinking Water

<http://www.epa.gov/safewater/dwinfo/index.html>

Federal Guideline on Prudent Disposal of Medications

http://www.whitehousedrugpolicy.gov/publications/pdf/prescrip_disposal.pdf

