

Preventing *Legionella* in Household Water Systems



Legionella bacteria can grow and become a health concern in your household water system, such as piping and fixtures, and devices, such as humidifiers and hot tubs. Some people may become sick with Legionnaires' disease when exposed to *Legionella* bacteria, particularly those with weakened immune systems or [other risk factors](#). **By identifying and addressing common sources of *Legionella* growth, you can reduce your risk of becoming sick with Legionnaires' disease.**

Temperatures

Legionella grows best at water temperatures between approximately 77–113°F but can grow in temperatures up to at least 122°F. Common locations where water may be at or near these temperatures in your home include water heaters or plumbing fixtures, such as showers and faucets. Cold water may reach these temperatures if allowed to sit stagnant (no flow) in a warm area, such as a humidifier reservoir in a hot room or a hose outside in the summer. It's important to know that freezing does not kill *Legionella* bacteria.

Action steps to prevent *Legionella* growth in your home

- ✓ Water heater holding temperature settings may not be obvious. Review your water heater's owner manual to determine approximate temperatures for each setting.
- ✓ Water temperatures hot enough to kill *Legionella* bacteria can cause serious [burns](#). Consider working with a plumber to determine the best option for reducing water temperatures after the water heater, such as installing a thermostatic mixing valve, to reduce the risk of burns.

Stagnation

Legionella can grow in areas with little to no water flow; this is called stagnation. Common locations in your home where water may be stagnant include guest bathroom showers and sinks, utility room sinks, basement fixtures, hose spigots, and devices such as power washers or humidifiers. Other locations besides your primary home that may have stagnant water include recreational vehicles (RVs), cabins, and vacation homes.

Action steps to prevent *Legionella* growth in your home

- ✓ Identify all the plumbing fixtures in your home. Thoroughly flush, or run water through them, frequently. If the fixture uses both hot and cold water, it is important that the hot and cold water both receive regular use or flushing.
- ✓ Discard leftover water in devices, such as humidifiers, when not in use.

Sediment accumulation

Sediment, such as soil or sand, and biofilm (pipe slime) can help *Legionella* bacteria grow and survive. Sediment can settle in your water heater or other plumbing fixtures, such as water softeners. Disturbances in or near your home caused by construction, pressure drops, or water shut-offs can dislodge sediment and biofilm causing the bacteria to spread.

Action steps to prevent *Legionella* growth in your home

- ✓ Extensively flush plumbing fixtures in your home after any disturbance, especially a loss of water pressure or water shut off.
- ✓ Follow the owner's manual for routine flushing, maintenance, and cleaning of your water heater and water softener.
- ✓ Regularly clean or replace plumbing fixtures, like showerheads, aerators, and faucets, to prevent mineral buildup and biofilm growth.

Aerosolization

Legionella bacteria can enter the lungs and make people sick when it is aerosolized or aspirated (inhaled). Common examples of devices in your home that use aerosolized water include humidifiers, aromatherapy diffusers, CPAPs, water flossers, power washers, garden hoses, and decorative fountains.

Action steps to prevent *Legionella* growth in your home

- ✓ Use distilled water to fill and clean devices that aerosolize water. Tap water is not sterile and may contain bacteria.
- ✓ Follow the owner's manual for routine cleaning, disinfection, and maintenance of devices.
- ✓ Routinely replace filters and other device components.
- ✓ Consider options for reducing aerosols or wearing personal protective equipment (such as a fitted mask) while completing activities that generate a lot of aerosols.

Hot tubs

Hot tubs generate aerosols and operate at temperatures that promote *Legionella* growth.

Action steps to prevent *Legionella* growth in your home

- ✓ Follow the owner's manual for routine cleaning, maintenance, and filter replacement instructions.
- ✓ Properly maintain disinfectant levels, such as chlorine and bromine.
- ✓ Regularly monitor disinfectant, pH, and other water quality measures as directed by the owner's manual. Disinfectants may not work as well to kill *Legionella* bacteria when the pH is not in the correct range.

Find more details and learn about additional prevention tips from the [CDC \(Centers for Disease Control and Prevention\) Preventing Waterborne Germs at Home](https://www.cdc.gov/prevention/waterborne/index.html) webpage.

