



Alliance to Prevent Legionnaires' Disease



WHAT THE EXPERTS SAY ABOUT **PREVENTING LEGIONNAIRES' DISEASE**

These resources are meant for general education and information purposes only.
Each situation and water system is unique and requires an individualized action plan.

Alliance to Prevent Legionnaires' Disease, Inc. | 1200 G Street NW, Suite 800 | Washington, DC 20005
preventlegionnaires.org | 1-202-434-8757

1 Ensuring that the water that flows into buildings is properly disinfected against *Legionella* and other waterborne pathogens is the first and primary line of defense to address *Legionella* growth and prevent disease.

“Lab-scale type studies have illustrated that corrosion in drinking water pipes can stimulate the growth of Legionella.” This is due to the fact that corrosive water dissolves the protective mineral lining in pipes and then leaches iron out of old pipes. Iron is a micronutrient that boosts Legionella reproduction since the metal reacts with and inactivates chlorine disinfectant that otherwise would kill the bacteria.

-Amy Pruden, Environmental Microbiologist at Virginia Polytechnic Institute based on recent study which found that the corrosive tap water in Flint, Michigan was not only linked to dangerous lead levels but it also contributed to two outbreaks of Legionnaires' disease there.¹

“Water operators need to understand that when water service is disrupted, the risk of Legionnaires' disease can go up and the community should be notified.”

-Janet Stout, Director of the Special Pathogens Lab in Pittsburgh²

“There is a need to update and expand the standard dogma that water heaters, indoor plumbing, and source water are the reservoirs of Legionella, while community outbreaks require an air-dispersal source. Public health investigators should not exclude the community water system from consideration as the disease transmission vector. Maintenance and disinfection of water distribution mains must also be included, particularly in community water systems supplied by surface water, where summer temperatures and nutrient levels can create conditions conducive for the amplification of Legionella growth in biofilm.”

-NJ Department of Health, Community Outbreak of Legionellosis and an Environmental Investigation into a Community Water System, 2014³

*“While [*Legionella* bacteria] often manifest most significantly outside a drinking water utility's immediate jurisdiction, the qualities of the delivered water may be important factors in influencing subsequent pathogen propagation in the building system environment. More research into this relationship will inform strategies to control such pathogens.”*

-Peter Grevatt, PhD, Director, EPA Office of Ground Water and Drinking Water⁴

¹ (Environ. Sci. Technol. Lett. 2016, DOI: <http://pubs.acs.org/doi/abs/10.1021/acs.estlett.6b00192>)

² <http://cen.acs.org/articles/94/web/2016/07/Legionnairesoutbreaks-Flint-linked-corrosive-tap.html>

³ (<http://www.ncbi.nlm.nih.gov/pubmed/25083716>)

⁴ Water Research Foundation, 2014.

<http://www.waterrf.org/resources/magazine/Documents/AWRvol24no4.pdf#search=legionella>

WHAT THE EXPERTS SAY ABOUT PREVENTING LEGIONNAIRES' DISEASE

“Infected water can come from municipal or well supplies or holding tanks so the water supply itself is what infects cooling towers.”

-World Health Organization⁵

“[The EPA should] include Legionella in the final selection of contaminants of the Unregulated Contaminant Monitoring Rule (UCMR 4)...Nationally, we continue to see an increase in Legionella disease outbreaks, not from cooling tower exposure but from exposures within premise plumbing... Are water systems providing a continual “seeding” of Legionella bacteria and the bacteria getting into premise plumbing...?”

-R. Ellingboe, Supervisor-Drinking Water Protection Section, Environmental Health Division at Minnesota DOH,
February 9, 2016 letter to US EPA

“Maintenance of an adequate disinfectant residual throughout the water distribution system plays a key role in controlling the growth of pathogens and biofilms and is a treatment technique that serves as one of the final barriers to protect public health. Lack of an adequate residual may increase the likelihood that disease-causing organisms such as E. Coli and Legionella are present.”

-Pennsylvania Environmental Quality Board, Disinfection Requirements Rule, 2/20/16

2 Vast Majority of Legionnaires' Disease Cases are Linked to Drinking Water

“Potable (drinking) water is the most important source of Legionella.”

-US Environmental Protection Agency (EPA)⁶

“Cases of healthcare-associated [Legionnaires' disease] often arise from exposure to Legionella bacteria in hospital potable water distribution systems.”

-Veterans Health Administration⁷

“Many of the Legionnaires' disease outbreaks in the US over the past 15 years could have been prevented... Better water system management is the best way to reduce illness and save lives.”

⁵ Bartram, J.; Chartier, Y.; Lee, J.V.; Pond, K. & Surman-Lee, S. (2007) *Legionella* and the prevention of legionellosis. World Health Organization: India.)

⁶ http://water.epa.gov/action/advisories/drinking/upload/2009_02_03_criteria_humanhealth_microbial_legionellafs.pdf

⁷ VHA Directive 1061, August 13, 2014, http://www.va.gov/vhapublications/ViewPublication.asp?pub_ID=3033

3 Legionnaires' Disease Cases Require Thorough Investigations to Determine the Root Cause

"You've got to look at the water. Legionella is actually coming through the city water supply, but in low numbers.... But Legionella thrives in warm water, and when it multiplies to larger numbers—often in warm reservoirs like water heaters or hot tubs—it can infect susceptible individuals such as elderly smokers or older patients with chronic illnesses."

-Dr. Victor Yu, University of Pittsburgh, School of Medicine, Special Pathogens Lab⁸

"It seems as though, if the cooling towers are contaminated, the water towers would be contaminated... The only way to be sure Legionella is not posing a risk is to test for it. I don't see why you wouldn't test."

-Dr. Stephen Edberg, Public Health Microbiologist at Yale University⁹

The CDC provides environmental investigation tools to assist health officials in responding to outbreaks and individual cases of Legionnaires' disease comprehensively. We advocate the use of these tools in their entirety in order to positively identify the source and prevent future cases. The tools can be found at:

[Single Case Investigation Protocols](#) // [Outbreak Investigation Protocols](#)

⁸ City & State, City did not test drinking water in buildings linked to legionnaires, 8/12/15

⁹ Ibid.