



Legionella and Legionnaires' Disease – Frequently Asked Questions

Q: What is Legionella?

Legionella bacteria is naturally found in fresh water sources such as lakes, streams, and ponds at concentrations low enough where development of Legionnaires' disease is considered rare

Q: What is the difference between Legionella and Legionnaires' disease?

Legionnaires' disease is the pneumonia caused by an exposure to Legionella bacteria. The risk of Legionnaires' infection increases as the concentration of Legionella bacteria rises within a water source.

Q: What conditions are favorable for the growth of Legionella bacteria?

Similar to most bacteria, Legionella thrive in a warm, humid, and stagnant environment. In most cases, significant growth occurs between the temperatures of 68F and 122F, with the most exponential growth generally observed between 95F and 115F. According to Occupational Safety and Health Administration, rust and scale present in a water supply can also promote the growth of Legionella. Disinfectants such as chlorine are effective in prohibiting growth of Legionella bacteria.

Q: How is Legionnaires' disease spread? How is one exposed to Legionella bacteria?

As mentioned previously, the bacteria becomes a health concern when provided an environment (warm and stagnant) for growth and a route for exposure. The most common man-made sources of highest concern are:

1. Water Heaters
2. Cooling Towers
3. Humidifiers
4. Mistifiers (ex: Produce Mistifiers)
5. Shower Heads
6. Faucets
7. Hot Tubs
8. Whirlpool Baths
9. Decorative Water Fountains
10. Complex Plumbing Systems

Home and car air conditioning units do not use water to cool the air so they are considered to be a limited or low risk source.

According to the Centers for Disease Control and Prevention (CDC), Legionella bacteria grows best in large complex water systems commonly found in buildings and high-rises where water has more opportunities to stagnate.

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An individual contracts Legionnaires' disease or Pontiac Fever when breathing in small droplets of air containing high growth rates of Legionella bacteria.

Q: Can I get Legionnaires' by drinking water from the tap?

Very rarely do people contract Legionnaires' disease from the act of drinking water. Only those who are more likely to aspirate or have difficulty breathing are at a higher risk.

Q: Can Legionnaires' disease be transmitted from human-to-human?

No. Legionnaires' disease is not considered contagious and will therefore not spread from human-to-human close contact.

Q: Is everyone at risk for Legionnaires' disease if they are exposed or inhale droplets of water containing Legionella bacteria?

No. Most individuals have developed a resistance to the disease. According to OSHA, it is believed that less than 5% of persons exposed will develop symptoms.

Similar to other illnesses, those with compromised immune systems are at a higher risk of develop Legionnaires' disease and experiencing more severe symptoms. Factors that increase the risk of developing Legionnaire include:

- 1) Organ transplant
- 2) Age (50+ years or older)
- 3) Smoking
- 4) Weakened immune system
- 5) Underlying medical condition(s)
- 6) Certain drug therapies
- 7) Binge drinking

Q: What are the symptoms of Legionnaires' disease?

During early onset, the symptoms of Legionnaires' are similar to the flu.

Early symptoms include: Slight fever, headache, body aches, loss of appetite, diarrhea, and nausea.

As the disease progresses, the individual may develop pneumonia which in some cases may become so severe that hospitalization is necessary.

Common pneumonia symptoms include: High fever (>102F), cough, difficulty breathing or shortness of breath, chills, and chest pains.

Although most people will recover, complications from Legionnaires' disease can be fatal. Especially in those individuals with increased risk factors. The CDC estimates that 10% of cases are fatal due to complications of the disease.

Q: What is the onset time of Legionnaires' disease? (When will symptoms start?)

If infection occurs, symptoms usually present withing 2-10 days following initial exposure.

Q: How is Legionnaires' disease diagnosed or treated?

Legionnaires' is difficult to diagnose as it is often indistinguishable from other illnesses and types of pneumonia. If Legionnaires' is suspected, a physician will obtain sputum, blood, or urine samples. Urine samples are the most common test for diagnosing Legionnaires disease but cannot differentiate the difference from a current infection and an old infection.

Legionnaires' is treated with antibiotics. Early treatment routines reduce severity.

There is no vaccine for Legionnaires' disease.

Q: How do I prevent exposure to Legionella bacteria and Legionnaires' disease?

Eliminating the source of growth is for Legionella bacteria is the best method for prevention. Examples of source controls include:

- 1) Maintain water heater temperatures at 140F and faucet water at 122F or higher.
- 2) Frequently flush water lines, especially during periods of infrequent use. Do not allow water to stagnate. Large water storage tanks that may allow for water to stagnate should be emptied and flushed frequently.
- 3) Frequently check and maintain disinfectant (ex: chlorine) levels in hot tubs. Follow manufacture recommendations for routine cleaning.
- 4) Installation of 0.2-micron point-of-use filters on faucet fixtures.
- 5) Use of distilled or boiled water in humidifier devices.

Q: How common is Legionnaires' disease?

In the United States, approximately 10,000 are reported annually. Since Legionnaires' is often underdiagnosed the CDC estimates that actual case rates may be 1.8 times higher than reported.

Q: Pontiac Fever was mentioned previously, what is Pontiac Fever?

Legionella bacteria may also be the cause of a flu-like illness called Pontiac Fever. This illness is considered far less severe and an individual will likely present with flu-like symptoms such as fever, headache, loss of appetite, chills, body aches, nausea, and a dry cough. Symptoms generally subside within 2-5 days. According to OSHA, there have been no reported deaths from Pontiac Fever.

Additional Resources:

CDC, "Legionella Fast Facts": <https://www.cdc.gov/legionella/fastfacts.html>

CDC, "Causes, How it Spreads, and People at Increased Risk": <https://www.cdc.gov/legionella/about/causes-transmission.html>

WHO, "Legionnaires' Fact Sheet": <https://www.who.int/news-room/fact-sheets/detail/legionellosis>

Illinois Department of Public Health, "Legionella": <https://dph.illinois.gov/topics-services/environmental-health-protection/waterborne-opportunistic-pathogens/legionella.html>

Occupational Safety and Health Administration. *Legionnaires' Disease: Questions and Answers*. Online. Date Accessed: April 15, 2024

The Centers for Disease Control and Prevention. *Legionnaires': Causes, How it Spreads, and People at Increased Risk*. Online. Date Published: March 2021. Date Accessed: April 16, 2024

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