

## Legionellosis (*Legionnaires' disease, Pontiac fever*)

Legionellosis is a disease caused by *Legionella* bacteria that can cause mild respiratory illness or pneumonia. Most cases occur as single isolated events. Outbreaks are relatively rare. There are two distinct forms of the disease: "Legionnaires' disease" and "Pontiac fever." Legionnaires' disease is named after a large outbreak at an American Legion convention in Philadelphia in 1976.

### Transmission

Legionnaires' disease is spread via:

- **Environment to person** when they breathe in a mist or small droplets of water in the air that contains the bacteria.

The bacteria grow best in warm water, and are known to have been found in:

- Showerheads and sink faucets
- Cooling towers (structures that contain water and a fan as part of centralized air-cooling systems for buildings or industrial processes)
- Hot tubs
- Decorative fountains and water features
- Hot water tanks and heaters
- Large, complex plumbing systems

Person-to-person spread does not occur. (Only one case of possible person-to-person transmission has ever been reported.) Outbreaks may occur following the exposure of many individuals to a common source of the bacteria in the environment, including places like hotels, hospitals, and other large buildings, when the water supply becomes contaminated. Most healthy individuals do not develop symptoms after exposure to *Legionella*, and symptomatic infection is rare in people younger than 20.

Risk Factors, the disease most often affects:

- older individuals ( $\geq 50$ )
- males
- current or former smokers
- immunocompromised individuals
- underlying illnesses such as chronic lung disease, cancer, diabetes, or kidney failure.

It is unknown at this time if past infection gives people immunity.

### Symptoms

Symptoms of legionellosis are:

- **Muscle aches**
- **Headache**
- **Tiredness**
- **Loss of appetite**
- **Dry cough**
- **High fever** (102°F to 105°F)

- **Chills**
- **Diarrhea**

Chest X-rays often show pneumonia in Legionnaires' disease, which may lead to death, especially in those with weakened immune systems. Pontiac fever is a milder illness with symptoms like Legionnaires' disease but does not progress to pneumonia or death. Symptoms of Pontiac fever go away in two to five days without treatment.

The period between exposure and onset of illness for Legionnaires' disease is **two to 10 days** but is often **five to six days** and can be up to 19 days; for Pontiac fever, it is one to two days but can be as short as four hours.

## Diagnosis

Legionellosis is usually diagnosed by a health care provider using a variety of laboratory tests including culture and antigen testing.

## Treatment

Antibiotics given by a health care provider can be used to treat the disease.

## Prevention

The key to preventing Legionnaires' disease is to **reduce the risk of *Legionella* growth and spread**. Building owners and managers can use a [water management program](#) to reduce the risk of *Legionella* growing and spreading. General guidelines for legionellosis prevention include cleaning and/or chlorinating areas known to be reservoirs in reported outbreaks, such as decorative water fountains, air conditioning cooling towers, humidifiers, whirlpool spas, and respiratory therapy devices.

For more information about the treatment of legionellosis, contact your health care provider or visit [https://www.cdc.gov/legionella/php/laboratories/?CDC\\_AAref\\_Val=https://www.cdc.gov/legionella/clinicians/diagnostic-testing.html](https://www.cdc.gov/legionella/php/laboratories/?CDC_AAref_Val=https://www.cdc.gov/legionella/clinicians/diagnostic-testing.html).

## Exclusion Guidance

**People should not be excluded from child care, school, work, or other activities unless the [general exclusions apply](#).** All others can attend work and other functions as long as they are well enough to do so and are able to practice good hand washing and respiratory etiquette.

For additional information about legionellosis, contact the North Dakota Department of Health and Human Services', Public Health Division, at 800.472.2180.

**This disease is a reportable condition. As mandated by North Dakota law, any incidence of this disease shall be reported to the North Dakota Department of Health.**

 **Report Immediately: 800.472.2180 or 701.328.2378**  **Possible Bioterrorism Agents (CDC classified A, B or C Agent)**

Resources:

1. Kimberlin, D. W., Barnett, E. D., Lynfield, R., Sawyer, M. H. (2021) Red Book: 2021-2024 Report of the Committee on Infectious Diseases. 32nd ed. American Academy of Pediatrics. [Management and Prevention of Infectious Diseases] [pages 465-469].
2. Centers for Disease Control and Prevention. (2021, March 25). *CDC - legionella*. Centers for Disease Control and Prevention. Retrieved May 12, 2023, from <https://www.cdc.gov/legionella/index.html>

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### Public Health Division

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