

Legionellosis: Legionnaires' Disease/ Pontiac Fever

What is legionellosis?

Legionellosis is an infection caused by the bacterium *Legionella pneumophila*, which acquired its name in 1976 when an outbreak of pneumonia caused by this newly recognized organism occurred among persons attending a convention of the American Legion in Philadelphia. The disease has two distinct forms:

- Legionnaires' disease, the more severe form of infection which includes pneumonia, and
- Pontiac fever, a milder illness.

How common is legionellosis in the United States?

An estimated 8,000 to 18,000 people get Legionnaires' disease in the United States each year. Some people can be infected with the *Legionella* bacterium and have mild symptoms or no illness at all.

Outbreaks of Legionnaires' disease receive significant media attention. However, this disease usually occurs as a single isolated case not associated with any recognized outbreak. When outbreaks do occur, they are usually recognized in the summer and early fall, but cases may occur year-round. About 5% to 30% of people who have Legionnaires' disease die.

What are the usual symptoms of legionellosis?

Patients with Legionnaires' disease usually have fever, chills, and a cough. Some patients also have muscle aches, headache, tiredness, loss of appetite, and, occasionally, diarrhea. Chest X-rays often show pneumonia. It is difficult to distinguish Legionnaires' disease from other types of pneumonia by symptoms alone; other tests are required for diagnosis.

Persons with Pontiac fever experience fever and muscle aches and do not have pneumonia. They generally recover in 2 to 5 days without treatment.

The time between the patient's exposure to the bacterium and the onset of illness for Legionnaires' disease is 2 to 10 days; for Pontiac fever, it is shorter, generally a few hours to 2 days.

How is legionellosis diagnosed?

The diagnosis of legionellosis requires special tests not routinely performed on persons with fever or pneumonia. Therefore, a physician must consider the possibility of legionellosis in order to obtain the right test. The most useful tests detect the bacteria in sputum, find *Legionella* antigens in urine samples, or compare antibody levels to *Legionella* in two blood samples obtained 3 to 6 weeks apart.



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Who gets legionellosis?

People of any age may get Legionnaires' disease, but the illness most often affects middle-aged and older persons, particularly those who smoke cigarettes or have chronic lung disease. Also at increased risk are persons whose immune system is suppressed by diseases such as cancer, kidney failure requiring dialysis, diabetes, or AIDS. Those that take drugs that suppress the immune system are also at higher risk.

Pontiac fever most commonly occurs in persons who are otherwise healthy

What is the treatment for legionellosis?

Erythromycin was the antibiotic recommended for treating persons with Legionnaires' disease. Now macrolides (e.g., azithromycin) and quinolones (e.g., ciprofloxacin, levofloxacin) are the antibiotics of choice. In severe cases, a second drug, rifampin, may be used in addition. Progression of infiltrates as seen on chest x-ray is common despite appropriate antibiotic therapy. Treatment is usually prolonged and recovery may be slow. Pontiac fever requires no specific treatment.

How is legionellosis spread?

Outbreaks of legionellosis have occurred after persons have breathed mists that come from a water source (e.g., air conditioning cooling towers, whirlpool spas, showers) contaminated with *Legionella* bacteria. Persons may be exposed to these mists in homes, workplaces, hospitals, or public places. Legionellosis is not passed from person to person, and there is no evidence of persons becoming infected from auto air conditioners or household window air-conditioning units.

Where is the Legionella bacterium found?

Legionella organisms can be found in many types of water systems. However, the bacteria reproduce to high numbers in warm, stagnant water (90°-105° F), such as that found in certain plumbing systems and hot water tanks, cooling towers and evaporative condensers of large air-conditioning systems, and whirlpool spas. Cases of legionellosis have been identified throughout the United States and in several foreign countries. It is believed to occur worldwide.

What is being done to prevent legionellosis?

Improved design and maintenance of cooling towers and plumbing systems to limit the growth and spread of *Legionella* organisms are the foundations of legionellosis prevention.

During outbreaks, investigators seek to identify the source of disease transmission and recommend appropriate prevention and control measures, such as decontamination of the water source.

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