

# Legionnaires' disease

## What is Legionnaires' disease?

Legionnaires' disease is a lung infection (pneumonia) caused by a bacterium named *Legionella pneumophila*. The name *Legionella pneumophila* was derived from the original outbreak at the 1976 American Legion Convention in Philadelphia. *Pneumophila* means lung-loving in Greek.

## What organism causes Legionnaires' disease?

Legionnaires' disease is caused by bacteria that belong to the family Legionellaceae. This family now includes 48 species and over 70 serogroups. Approximately half of these species have been implicated in human disease. *Legionella pneumophila* is responsible for approximately 90% of infections. Most cases are caused by *L. pneumophila*, serogroup 1. *Legionella* species are small (0.3 to 0.9  $\mu\text{m}$  in width and approximately 2  $\mu\text{m}$  in length) faintly staining Gram-negative rods with polar flagella (except *L. oakridgensis*). They generally appear as small coccobacilli in infected tissue or secretions. They are distinguished from other saccharolytic bacteria by their requirement for L-cysteine and iron salts for primary isolation on solid media and by their unique cellular fatty acids and ubiquinones.

## Where do Legionella bacteria come from?

*Legionella* are natural inhabitants of water and can be detected in rivers, lakes, and streams. One type of *Legionella* species (*L. longbeachae*) has been found in potting soil.

## What have been the water sources for Legionnaires' disease?

The major source is water distribution systems of large buildings including hotels and hospitals. Cooling towers have long been thought to be a major source for *Legionella*, but new data suggest that this is an overemphasized mode of transmission. Other sources include mist machines, humidifiers, whirlpool spas, and hot springs.

Air conditioners are not a source for Legionnaires' disease. They were suspected to be the source in the original American Legion outbreak in a Philadelphia hotel, but new data now suggests that the water in the hotel was the actual culprit.

# Legionnaires' disease

## How do people contract Legionella?

The most popular theory is that the organism is aerosolized in water and people inhale the droplets containing *Legionella*. However, new evidence suggests that another way of contracting Legionella is more common.

Aspiration is the most common way that bacteria enter into the lungs to cause pneumonia. Aspiration means choking such that secretions in the mouth get past the choking reflexes and instead of going into the esophagus and stomach, mistakenly, enter the lung. The protective mechanisms to prevent aspiration is defective in patients who smoke or have lung disease. Aspiration now appears to be the most common mode of transmission.

Disclaimer: This information is provided for informational purposes only and not for the purpose of providing legal or medical advice. You should contact your physician or attorney to obtain advice with respect to any particular issue or problem