

LEGIONNAIRES' DISEASE

Legionnaires' Disease is a severe form of pneumonia caused by the legionella bacteria. The disease acquired its name following an outbreak of pneumonia among attendees at a 1976 American Legion convention in Philadelphia that eventually killed 34 people. Early symptoms of the disease are much like the flu, including slight fever, headache, aching joints and muscles, and lack of energy. More severe pneumonia-like symptoms may appear after a short time period (1-2 days typically). These symptoms may include high fever, cough, difficulty in breathing, shortness in breath, chills and chest pain. According to the Centers for Disease Control (CDC), the disease is fatal in 5-30% of the cases; however, through improved medical treatments, this percentage is declining. Although it's the outbreaks of the illness that receive significant media attention, the disease usually occurs as a single, isolated case. Recovery often includes prolonged fatigue and lack of energy. One of the largest databases of Legionnaires' disease patients followed for years after infection indicates that the body develops immunity from the first infection.

How Does a Person Get Legionnaires' Disease?

Legionnaires' Disease is acquired by breathing mists or aerosols (very tiny droplets) of water contaminated with legionella bacterium. Some investigators believe that the disease may also be acquired via the bacterium being aspirated into the lungs while drinking contaminated water. The bacterium must be inhaled deep into the lungs. Legionnaires' disease is not contagious. There is an incubation period of 2-10 days. This is the time it takes from exposure to aerosol to the onset of symptoms. According to the CDC, the summer and early fall are the most common times of the year for disease outbreaks. However, they can occur at any time during the year. Legionnaires' disease may occur in epidemics or as isolated events, not associated with other cases.

How Is Legionnaires' Disease Diagnosed & Treated?

Legionnaires' disease is diagnosed through urine and blood tests. The patient is treated with antibiotics, for example erythromycin. Since the symptoms are similar as those of other pneumonias, often the diagnosis is not made until after treatment has begun.

Where is Legionella Found?

Legionella has been found in samples collected from various sources, including lakes, rivers and dirt. Most outbreaks are linked to cooling towers, humidifiers, hot water tanks, and air handling units. Other common sources are whirlpool spas, process water and ornamental water fountains. While legionella typically is not a problem at low concentrations, if allowed to multiply and reach elevated levels, it can cause a problem in building water systems. Ideal conditions for the bacteria to survive and multiply in water is a temperature of 90 - 105° F, a pH of 4.5 - 10.5 (the pH of pure water is typically ~ 7), and stagnant.

Who is at Risk of Acquiring Legionnaires' Disease?

Everyone is potentially exposed to legionella as it is a widely present bacterium, found at low concentrations. According to statistics from the Centers for Disease Control (CDC), as many as 18,000 individuals contract Legionnaires' disease annually. Due to the difficulty in distinguishing Legionnaires' disease from other pneumonia forms, many cases may go undiagnosed each year. Approximately 5-10% of those exposed actually acquire the disease. The ability for the body to fight off the invasion, and not develop Legionnaires' disease, is influenced by the individual's state of health. Factors that may increase risk of developing the disease include age (middle age & older people), smoking, heavy drinking, pre-existing pulmonary disease, and compromised immune systems.

How Can Legionnaires' Disease Be Prevented?

Good maintenance of building mechanical systems is the key to prevention. Periodic biocide treatments prevent or eliminate the organism from the source. Be alert to pooling water problems, especially near systems that produce water aerosols. Where a contamination has occurred, special cleaning, typically with a chlorine-producing chemical or high temperatures eliminate legionella from the water source.