

What is Legionella?

Description

Legionella is a type of bacterium found naturally in freshwater environments. It can become a health concern when it grows and spreads in human-made water systems like showers, hot tubs, and large plumbing systems.

Understanding Legionella

Legionella is a genus of pathogenic bacteria that are found worldwide, with at least 50 species and 70 serogroups identified. The bacteria are present in various freshwater environments, such as rivers and lakes. They can survive in a wide range of conditions and are able to colonize hot and cold water systems, soil, and potting mixes.

However, the bacteria become a health concern when they grow and spread in human-made water systems. These can include showerheads and sink faucets, cooling towers in air conditioning systems, hot tubs that aren't drained after each use, decorative fountains and water features, hot water tanks and heaters, and large plumbing systems.

The bacteria grow best in warm water, like the kind found in hot tubs, cooling towers, hot water tanks, and large plumbing systems. They multiply in water that is stagnant or not properly disinfected, and then can spread in droplets small enough for people to breathe in. People get infected when they breathe in mist or accidentally swallow water into the lungs containing the bacteria. Most healthy people exposed to Legionella do not get sick, but it can cause severe pneumonia, known as Legionnaires' disease, in susceptible individuals, particularly those with a weakened immune system.

Legionnaires' Disease

Legionnaires' disease is a severe form of pneumonia that can lead to complications such as respiratory failure, septic shock, or even acute kidney failure. Symptoms can include cough, shortness of breath, high fever, muscle pains, and headaches. Nausea, vomiting, and diarrhoea may also occur.

The disease is named after an outbreak in 1976, when many people who went to a Philadelphia convention of the American Legion suffered from this disease. This was the first time this bacterium was identified as a cause of pneumonia. The bacterium was later named Legionella.

Preventing Legionella Growth

Preventing Legionella growth in water systems involves regular maintenance and cleaning. This includes keeping hot water tanks and heaters at the right temperature and using disinfectants in places like hot tubs and cooling towers.

Water systems should be regularly inspected and cleaned to remove scale and sediment that can protect the bacteria from temperatures and biocides. Stagnant water in pipes should be flushed out, and equipment should be designed to minimize stagnation. For example, pipes should be sized so that water does not sit for long periods in any part of the system.

Temperature control is another key aspect of Legionella control. The bacteria multiply in water that is 20-45°C, particularly if it contains impurities like rust, sludge, scale, organic matter, and biofilms. Water services should be operated at temperatures that prevent Legionella growth: hot water storage cylinders (calorifiers) should store water at 60°C or higher, and cold water should be stored at temperatures below 20°C.

Biocides can be used to kill the bacteria or inhibit their growth, but they must be used properly to be effective. The choice of biocide will depend on a range of factors, including the type of water system, the operating temperature, the water quality, and the presence of other microorganisms.

Understanding what Legionella is and how it spreads can help in preventing the onset of Legionnaires' disease.

CATEGORY

1. Health

POST TAG

1. Accident
2. Health
3. Legionella
4. Mist
5. Occupational Illness and Disease

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