

Legionnaires' Disease & *Legionella*

What is Legionnaires' disease?

Legionnaires' disease, also known as legionellosis, is an infection of the lungs (pneumonia) by bacteria of the *Legionella* family. Infection occurs when a person breathes in bacteria that are commonly found in the environment. Almost all patients diagnosed with *Legionella* infection will need to be admitted to hospital for treatment. Legionnaires' disease can cause death if not treated in time.

What are the symptoms?

The early symptoms of Legionnaires' disease are typically similar to influenza-like illness and may include: fever, chills, muscle ache, headache, tiredness, lethargy, loss of appetite, and diarrhoea. People can become very sick with pneumonia (infection of the lungs) and develop cough (usually 'wet' or productive), shortness of breath or have difficulty breathing.

How is it spread?

Legionnaires' disease can occur after a person inhales or breathes in water vapour or dust that is contaminated with *Legionella* bacteria. Although there are many different species of *Legionella*, the two that most commonly cause disease are *Legionella pneumophila* and *Legionella longbeachae*.

Legionella pneumophila naturally occurs in warm water environments. It poses a risk when the warm water is aerosolised (i.e. turned into water vapour, mist or steam) and is inhaled. *L. pneumophila* can be found in the water of untreated/contaminated:

- Air conditioning cooling towers (in large buildings) and evaporative air conditioners,
- Hot water systems and plumbing (particularly if not used for some time)
- Spa pools and baths
- Fountains
- Rain water tanks and sprinkler systems
- Inappropriately maintained home humidifiers and CPAP machines (used to treat obstructive sleep apnoea)
- Commercial car washes.



Legionella longbeachae naturally occurs in soil and gardening products, and poses a risk when dust from these products is inhaled. *L. longbeachae* can be found in gardening products such as: potting mixes, gardening soils, mulches, composts, and soil conditioners.

People may be exposed to *Legionella* bacteria at home, at work, or in a public places. The time between a person's exposure to the bacteria and becoming sick is between 2-10 days, usually 5-6 days).

Legionnaires' disease is not spread from person to person.

Who is at risk?

Some people are more likely to contract Legionnaires' disease, including:

- People over 50 years of age
- Smokers
- People with chronic health conditions such as lung disease, diabetes, kidney disease
- People with weakened immune systems, including those on immunosuppressive medication or who are otherwise immunosuppressed due to another health condition (such as HIV or certain cancers)
- Men are also more commonly affected than women

How is it diagnosed?

It is often difficult to distinguish Legionnaires' disease from other types of pneumonia by symptoms alone. Chest x-rays help diagnose pneumonia, but the diagnosis of Legionnaires' disease requires special laboratory tests.

Tests of sputum (mucus coughed up from respiratory tract), blood, and/or urine samples can sometimes quickly confirm the diagnosis. Sometimes two blood samples taken three to six weeks apart are required to serologically confirm the diagnosis.

How is it treated?

Legionnaires' disease can usually be cured by treatment with appropriate antibiotics. For serious infections, patients may need to be cared for in an intensive care unit and have their breathing assisted on a ventilator.

How is it prevented?

L. pneumophila bacteria can grow to high numbers in warm, stagnant water. Outbreaks are sometimes associated with contaminated cooling towers (that are part of air conditioning systems in large buildings).

Regular inspections, disinfection and maintenance of cooling towers and plumbing systems limits the growth of the bacteria. All water-based air conditioners, hot water systems, spas and other equipment (eg humidifiers and CPAP machines) should be maintained and cleaned as per the manufacturer's instructions to prevent growth of *L. pneumophila*.

L. longbeachae is common in the soil and other gardening products. Infection can be prevented by reducing your exposure to dust. This can be done by following the manufacturers' warnings (present on labels/packaging of garden supplies), including:

- Wetting down the potting mix/mulch/soil etc. before distributing to reduce dust
- Wearing gloves and a P2 mask (available from hardware stores) when handling or distributing potting mix/mulch/soil
- Washing your hands after handling potting mix/mulch/soil, and before eating, drinking or smoking

Need more information?

For more information on Legionnaires Disease/*Legionella* infections contact your doctor or call the Health Protection Service, Communicable Disease Control Information Line during business hours on (02) 6205 2155.

Communicable Disease Control Section at the Health Protection Service is responsible for the investigation and surveillance of notifiable or infectious conditions in the ACT in order to control or prevent their spread in the community. This includes the promotion of immunisation, education and other strategies that help to limit the spread of diseases.

Legionnaires Disease, or infection with Legionella bacteria, is a notifiable condition. Cases must be notified to ACT Health.

Acknowledgements

- Heymann DL, 2015, *Control of Communicable Diseases Manual*, 20th edition.
- NSW Government, NSW Health, [Legionnaires disease fact sheet](#)
- Government of WA, Department of Health, [Legionnaires' disease fact sheet](#)

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