

# Air Cooling Systems and Legionnaire's Disease

## Legionella and legionnaire's disease—what are they?

*Legionella* is a genus of bacteria of which there are many different species commonly found in the environment. The species associated with air-handling systems that can cause Legionnaire's disease is known as *Legionella pneumophila*.

*Legionella pneumophila* is commonly found in warm water and can be spread by fine water droplets such as mist from air conditioning cooling towers and hot water systems. If the bacteria are inhaled this may cause the disease. Legionnaire's disease typically occurs in the warmer summer months as the bacterial growth accelerates at temperatures above 20 °C. *Legionella* infection cannot be caught from another person or from animals.

The disease normally starts as a mild respiratory illness within 2–10 days of exposure. Symptoms are at first similar to the flu, but within 48 hours the infected person's condition worsens, their temperature rises rapidly, a dry cough develops and they may display confusion if the brain is infected. Typically, the elderly and those with a weakened immune system are at greatest risk.

## What are my responsibilities as a building owner, occupier or manager?

In accordance with the *Health (Air-handling and Water Systems) Regulations 1994 (WA)*, the responsibility for the maintenance of air-handling systems rests with the people who own, operate, manage and control those systems.

As long as cooling towers, evaporative air conditioners/condensers and water distribution systems exist on a site, there is a risk of *Legionella* infection. These risks can be reduced and managed but not completely eliminated.

All businesses must undertake the minimum requirements detailed in AS/NZS 3666.1.1995 and AS/NZS 3666.2.1995. Commercial water-cooling towers, evaporative air conditioners/condensers and water distribution systems should be regularly maintained and cleaned.

Air conditioning contractors can usually provide a cleaning and maintenance service.

Note: *Legionella* will not grow in dry systems such as reverse-cycle air conditioners—these include air conditioners commonly mounted in windows and on walls of buildings.

## Has there been an outbreak in Australia?

Australia has experienced serious outbreaks of legionnaire's disease. In April 2000 four people died and over 100 others became infected after being exposed to *Legionella* bacteria in a Melbourne aquarium. In early 2001 seven cases were reported, resulting in two deaths, the suspected source of contamination being an Australian hospital. This trend has seen the number of cases of legionnaire's disease increase throughout the country, highlighting the need for business owners to be more accountable for air conditioning systems installed.

## Summary

- *Legionella* can be found widely in the natural environment. Given the correct conditions of warmth, moisture and nutrients it can become a risk to your health.
- Environments such as cooling towers and evaporative air conditioners or condensers can allow *Legionella* bacteria to increase to significant numbers.
- The first symptoms of legionnaire's disease usually develop within 2–10 days of exposure.
- *Legionella* infection can cause a serious disease, with a death rate of approximately 15%. However, it is usually readily cured if diagnosed promptly and treated with appropriate antibiotics.
- *Legionella* present in cooling towers, evaporative air conditioners/condensers and water distribution are easily destroyed by disinfecting, cleaning, emptying, drying or heating.
- Regular cleaning and maintenance of water-based air conditioning, cooling and water distribution systems is essential to prevent the growth of *Legionella*.
- AS/NZS 3666.1.1995 and AS/NZS 3666.2.1995 provides information on how to control the growth of *Legionella* for commercial operators of air conditioning and water distribution systems, such as spas and water coolers/fountains.

## Do you need further information?

For further information please contact City's Health and Environmental Services on **9400 4933** or visit [www.public.health.wa.gov.au](http://www.public.health.wa.gov.au)