

Legionnaires' Disease (LD) GP Fact sheet

What is legionnaires' disease?

Legionnaires' disease is a type of pneumonia caused by the bacteria *Legionella pneumophila* and other *Legionella species*. Pneumonia is confirmed either by chest X-ray or on physical examination. Pontiac fever is a milder form of the disease with flu-like symptoms and no pneumonia. Patients with Pontiac fever recover within 2-5 days without treatment.

What are the signs and symptoms?

The illness usually starts with a flu-like illness including fever, tiredness, headache, and muscle pains. This is followed by a dry cough and breathing difficulties which may progress to a severe pneumonia. Some people also develop diarrhoea or may become confused. Death occurs in 10-15% of otherwise healthy people and may be higher in some groups of patients.

The incubation period is 2-10 days although longer periods have been reported. Symptoms usually appear 5-6 days after infection but may take longer.

Who is most at risk?

All ages can be affected. However, most cases occur in people who are over 40 years of age. Men are more at risk than women, as are smokers, those with excessive alcohol intake, and people with chronic illnesses or people with immunosuppression due to treatment or disease e.g. HIV. Travel abroad is also an important risk factor. Pontiac fever most commonly occurs in people who are otherwise healthy.

How common is legionnaires' disease?

Legionnaires' disease is not very common. There are less than 20 cases reported each year in Ireland. However, it is thought that many more cases occur that are not diagnosed because legionnaires' disease is difficult to distinguish from other forms of pneumonia and specific laboratory tests have to be carried out to diagnose it. Most legionnaires' disease cases are sporadic, while 10-20% can be linked to outbreaks.

Diagnosis

A rapid urine antigen test (which detects a part of the *Legionella* bacteria in urine) or an antibody blood test are available. Legionnaires' disease is also diagnosed by undertaking culture or a PCR test on sputum samples. Please consult your local laboratory for information on sending specimens for *Legionella* investigations.

Treatment

The British Thoracic Society (BTS) guidelines recommend clarithromycin ± rifampicin as the treatment of choice for legionnaires' disease with a fluoroquinolone as an alternative. Pontiac fever requires no specific treatment. See [National Guidelines on the Control of Legionellosis in Ireland 2009, Chapter 1](#).

Notification

Legionnaires' disease is a statutorily notifiable disease. Ireland has a low rate of notification. This suggests that under-diagnosis and thus, under-reporting of Legionnaires' disease currently exists in Ireland. Delay of appropriate therapy can result in poor outcome and notification of a case can lead to detection of environmental sources and prevention of further cases.

Where are *Legionella* bacteria found?

Legionella is a group of bacteria commonly found in low, harmless numbers in water, including tap water, but they can multiply to high levels in stagnant water, especially in water temperatures in the range 20°C to 45°C. These organisms do not appear to multiply below 20°C and do not survive above 60°C. They may however, remain dormant in cool water and multiply when temperatures reach a suitable level. Chlorination of water supplies does not guarantee elimination of *Legionella* bacteria.

Recognised and potential sources of *Legionella*:

- Hot and cold water systems
- Cooling towers and evaporative condensers (in air-conditioning systems)
- Respiratory and other therapy equipment
- Spa pools / natural pools / thermal springs
- Fountains / sprinklers
- Humidifiers for food display cabinets
- Water cooling machine tools
- Vehicle washer/carpet cleaner/ultrasonic misting machine/sump pump.

What they have in common is a combination of high temperature and potential for aerosol formation.

Legionella have also been found in potting compost, particularly in warm countries. However, recently several cases associated with potting compost have been reported from Scotland (<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19496>) and (<http://www.hps.scot.nhs.uk/resp/legionella.aspx#Longbeachae>). For more information on compost see [Legionnaires' disease factsheet for the public](#)

A recent study in the UK found that not adding screen wash to windscreen wiper fluid was identified as a possible risk factor for community acquired legionnaires' disease (http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1274091218489).

Modes of Transmission

How do you get legionnaires' disease?

The disease is spread through the air from a water source. People become infected when they breathe in aerosols (tiny droplets of water) which have been contaminated with *Legionella* bacteria. Aspiration of water contaminated with *Legionella* has also caused legionnaires' disease. This is more likely to occur in people with swallowing disorders or in conjunction with naso-gastric feeding. There is no evidence of spread from person-to-person.

Prevention of Legionellosis

1. Improved design and maintenance of cooling towers and plumbing systems to limit the growth and spread of *Legionella* organisms are the foundations of Legionellosis prevention.
2. During outbreaks, Public Health Department investigators seek to identify the source of disease transmission and recommend appropriate prevention and control measures such as decontamination of the water source.
3. Greater attention should be given to notification of LD.
4. Rapid detection and notification of travel related Legionellosis is needed to identify potentially preventable disease transmission.

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