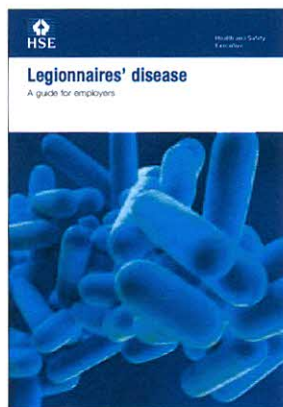


Legionnaires' disease

A guide for employers



This is a web-friendly version of leaflet IACL27(rev2), reprinted and redesigned 02/09

What is this leaflet about?

This short and simple guide is written to help you, as an employer, understand the health risks associated with legionella. It explains in general terms how to control those risks. You should consult the Approved Code of Practice (ACOP) and guidance *Legionnaires' disease: The control of legionella bacteria in water systems* for the technical detail on how to manage and control the risks in your system (see Further Information section at the end of this leaflet).

Who is this leaflet aimed at?

The leaflet is intended for employers who manage premises with hot/cold water services and/or wet cooling systems (eg cooling towers and evaporative condensers).

What is Legionnaires' disease?

Legionnaires' disease is a potentially fatal pneumonia caused by legionella bacteria. It is the most well-known and serious form of a group of diseases known as legionellosis. Other similar (but usually less serious) conditions include Pontiac fever and Lochgoilhead fever.

Infection is caused by breathing in small droplets of water contaminated by the bacteria. The disease cannot be passed from one person to another.

Everyone is potentially susceptible to infection but some people are at higher risk, eg those over 45 years of age, smokers and heavy drinkers, those suffering from chronic respiratory or kidney disease, and people whose immune system is impaired.

Where are legionella bacteria found?

Legionella bacteria are common in natural water courses such as rivers and ponds. Since legionella are widespread in the environment, they may contaminate and grow in other water systems such as cooling towers and hot and cold water services.

They survive low temperatures and thrive at temperatures between 20-45°C if the conditions are right, eg if a supply of nutrients is present such as rust, sludge, scale, algae and other bacteria. They are killed by high temperatures.

What are my duties under the law?

Under general health and safety law, you have to consider the risks from legionella that may affect your staff or members of the public and take suitable precautions. As an employer or a person in control of the premises (eg a landlord), you must:

- identify and assess sources of risk;
- prepare a scheme (or course of action) for preventing or controlling the risk;
- implement and manage the scheme – appointing a person to be managerially responsible, sometimes referred to as the 'responsible person';
- keep records and check that what has been done is effective; and
- if appropriate, notify the local authority that you have a cooling tower(s) on site (see 'Other duties').

If a person working under your control and direction is treated as self-employed for tax and national insurance purposes, they may nevertheless be your employee for health and safety purposes. You may need therefore to take appropriate action to protect them.

If you do not wish to employ workers on this basis, you should seek legal advice. Ultimately each case can only be decided on its own merits by a court of law.

Assessing the risk

The risk assessment is your responsibility as the employer or person in control of the premises. You may be able to carry out the assessment yourself but, if not, you should call on help and advice from within your own organisation or, if this is not available, from outside sources, eg consultancies.

You need to find out if your water systems (including the equipment associated with the system such as pumps, heat exchangers, showers etc) are likely to create a risk.

Ask yourself the following:

- Are conditions present which will encourage bacteria to multiply?
For example, is the water temperature between 20-45°C?
- Is it possible that water droplets will be produced and, if so, could they be dispersed over a wide area? For example, consider showers and aerosols from cooling towers.
- Is it likely that anyone particularly susceptible will come into contact with the contaminated water droplets?

Which systems present the greatest risk?

Cooling towers, evaporative condensers and hot and cold water systems have been associated with outbreaks. Other potential sources where precautions might be needed include humidifiers and spa baths.

If you decide that the risks are insignificant, your assessment is complete. You need take no further action other than to review the assessment periodically in case anything changes in your system.

Preventing or controlling the risk

If a risk is identified which cannot be prevented, you must introduce proper controls.

Risks from legionella in water systems can be controlled but careful planning, a successful management policy, competent staff and attention to proper control strategies are all essential.

You should consider whether you can prevent the risk of legionella in the first place by looking at the type of water system you need. For example, is it possible to replace a wet cooling tower with a dry air cooled system?

You need to prepare a written scheme which sets out how you intend to control the risk from legionella. You should describe:

- your system – an up-to-date plan or schematic diagrams are sufficient;
- who is responsible for carrying out the assessment and managing its implementation;
- the safe and correct operation of your system;
- what control methods and other precautions you will be using; and
- what checks will be carried out on the control scheme and how often.

The key point is to design, maintain and operate your water services under conditions which prevent or control the growth and multiplication of legionella.

You should:

- ensure that the release of water spray is properly controlled;
- avoid water temperatures and conditions that favour the growth of legionella and other micro-organisms;
- ensure water cannot stagnate anywhere in the system by keeping pipe lengths as short as possible or by removing redundant pipework;
- avoid materials that encourage the growth of legionella;
- keep the system and the water in it clean; and
- treat water to either kill legionella (and other micro-organisms) or limit their ability to grow.

Keeping the water in a cooling tower system clean will not only control legionella, but also lead to other advantages. By reducing scale and fouling, you are also ensuring that the cooling process is operating efficiently. Scaling reduces the effectiveness of biocide treatment and fouling can lead to loss of plant performance.

What water treatment methods can I use?

Cooling towers/systems are often treated using biocides. But there are other treatment strategies available such as ultra violet (UV) irradiation, copper/silver ionisation and ozone.

In hot and cold water systems legionella have traditionally been controlled by storing hot water above 60°C and distributing it at above 50°C – and keeping cold water below 20°C if possible. Other methods which are used include copper/silver ionisation and chlorine dioxide.

