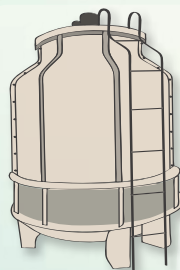


# Understanding Legionnaires' Disease

## What is Legionnaires' disease ?

Legionnaires' disease is caused by legionella. The disease was named after an outbreak of pneumonia occurred in Philadelphia of the USA during the American Legion Convention in 1976. In Hong Kong, Legionnaires' disease has become a statutory notifiable disease since March 1994.

## Modes of transmission



• Legionellae are found in the natural environment and commonly proliferate in man-made water systems such as cold and hot water tanks, cooling towers, whirlpools and spas, water fountains and respiratory therapy equipment.

• Legionnaires' disease is acquired by inhalation of contaminated airborne droplets (aerosols) or mist arising from these artificial water systems.



• People handling garden soils, composts and potting mixes also need to be aware of the possible health risks of contracting Legionnaires' disease.



• Currently, available evidence does not indicate that the disease is readily transmitted by person-to-person contact. Legionellae survive and multiply well in water at temperatures between 20°C and 45°C.

• There were relatively more cases of Legionnaires' diseases during the summer time in Hong Kong.

## Susceptible groups

While any person may develop Legionnaires' disease, certain groups of people are at higher risks:

- Patients who have low resistance to infection, especially those with respiratory disease, or on renal dialysis or immuno-suppressant drugs;
- Males;
- People of increasing age, particularly over 50 years old;
- Smokers; and
- Drinkers.



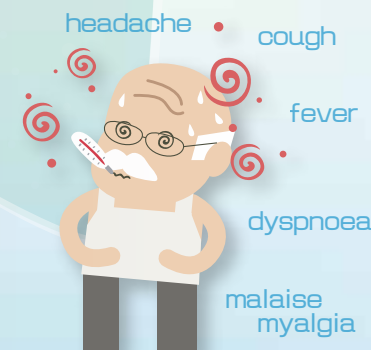
## Incubation period

The incubation period is 2 to 10 days.

## Clinical features

Legionnaires' disease mainly manifests as pneumonia. It commonly presents with symptoms as shown on the diagram.

- Symptoms such as confusion, abdominal pain and diarrhoea may also appear. However, some patients may only have mild symptoms.
- In severe cases, respiratory failure may develop and may even cause death.



## Management

Legionnaires' disease can be effectively treated with antibiotics. The course of therapy may vary with the patient's age and condition. The patient is advised to follow doctor's instruction.

## \*Relevant Information\*

For more information about the standards for good practices to be followed in the design, installation, operation and maintenance of man-made water systems, please refer to the Code of Practice for Prevention of Legionnaires' Disease published by the Prevention of Legionnaires' Disease Committee,

Hong Kong

(downloadable at website:

<http://www.emsd.gov.hk>).

Regarding cooling towers, please refer to the Code of Practice for Fresh Water Cooling Towers published by EMSD

(downloadable at website:

<http://www.emsd.gov.hk>).

For more information on Legionnaires' disease and other health topics, please visit the website of the Centre for Health Protection of the Department of Health: <http://www.chp.gov.hk> ◦



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## Prevention

### Personal health

An individual may reduce his/her susceptibility to the disease by avoiding smoking and excessive drinking, and maintaining good health.

### Hot and cold water systems

- Design and operate hot water systems to maintain the tap temperature at 50°C minimum before mixing with cold water.
- Drain and clean hot water storage devices regularly to flush away any settled sludge.
- Clean fresh water storage tanks at least quarterly.
- Clean hot water storage tanks at least once a year.
- Maintain properly and change regularly domestic water filters in accordance with the manufacturer's recommendations to prevent them from becoming a breeding ground for bacteria.
- Strainers in water taps and shower heads should be inspected, cleaned, descaled and disinfected regularly or on a frequency defined by the proper risk evaluation, taking account of the manufacturer's recommendations.



### Soil handling

People handling garden soils, composts and potting mixes should:

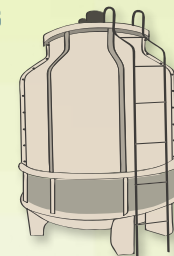
- Gently water gardens and composts using low pressure.
- Open composted potting mixes slowly and direct the opening away from the face.
- Wet the soil to reduce dust when potting plants.
- Avoid working in poorly ventilated places such as enclosed greenhouses.
- Wash hands thoroughly afterwards.



### Fresh water cooling towers

#### Design

- Ensure that the cooling towers are positioned away from air intakes/air exhausts/windows/pedestrian thoroughfares.
- Install effective drift eliminators on the towers.
- Provide water treatment equipment and bleed-off devices.
- Avoid dead legs to prevent stagnant water.
- Provide adequate and safe access.
- Follow relevant statutory requirements and standards for good design practices.



#### Maintenance

- Drain, clean and disinfect the towers at least twice a year.
- Dose the towers periodically with biocides or similar chemicals to kill any micro-organisms.
- Follow relevant standards for good maintenance practices.

### Water spray devices

Avoid using atomised water spray devices ( such as water spray type humidifiers ) where possible, otherwise precautionary measures such as the following should be taken:

- Use sterile/distilled/boiled/treated water to suit applications.
- Clean devices frequently.
- Disinfect circulated water.
- Purge devices prior to start-up.
- Disinfect devices periodically and before resumption of use after prolonged shut-down.

