

Human pathogen information sheet

What are legionella?

Legionella are bacteria that cause different symptoms in persons, from flu-like ones to severe pneumonia. They are environmental germs that exist around the world and occur naturally in surface waters and ground water in small numbers.

Legionella procreate best at temperatures between 25°C and 45°C. They are usually killed off at temperatures above 60 °C and typically do not multiply at temperatures below 20 °C. Artificial water systems such as water pipes in buildings offer an environment that fosters the growth and spread of the pathogen if temperatures are right. Legionella can procreate particularly well in deposits and coatings of the pipes.

How are legionella transmitted?

Through contaminated water droplets

The pathogens are transmitted by atomised, misted water. The pathogen-containing droplets can spread through the air and be inhaled. Possible sources of infection include showers, humidifiers, whirlpool baths or water taps, as well as cooling towers. There are also many other potential sources of infection.

When drinking, infection is rare but possible when water accidentally enters the lungs via the trachea when choking.

Important: Legionella cannot be transmitted from person to person.

What symptoms do the patients show?

Legionella cause two different symptoms in persons:

Legionnaire's disease/legionella pneumonia

Legionnaire's disease or legionella pneumonia is a type of pneumonia. Symptoms include coughing, chills, headaches and high fever, and patients may also feel extremely unwell. Diarrhoea and states of severe confusion may also occur. If left untreated – or if treated incorrectly – the pneumonia will often take a severe course, although there is a good chance of recovery if treated properly.

Pontiac fever

Another less well-understood disease that is caused by legionella bacteria is known as “Pontiac fever”. Symptoms include a flu-like fever, feeling unwell, headaches and aching limbs, but pneumonia does not develop. Pontiac fever usually resolves without intervention within a week or so.

What's the incubation period – and how long are you contagious?

The first symptoms of Legionnaire's disease occur 2 to 10 days after contact with the pathogen.

There are 5 hours to barely three days, on average 1 to 2 days, between infection and breakout of Pontiac fever.

Independently of the symptoms, the patients are not contagious.

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Who is most at risk?

Persons with compromised immune systems – including those who are taking medication to suppress the body's immune system – are particularly at risk, as are older persons and smokers. Men fall sick more often than women. This disease is rare in children.

What to do in case of illness?

- ▶ Pneumonia caused by legionella always requires treatment with effective antibiotics and often hospital stays.
- ▶ As with other flu-like diseases, only the symptoms usually need to be treated for Pontiac fever.
- ▶ Where cases occur, the source of infection must be found and removed quickly to prevent further infections.

How can I protect myself?

It is important to avoid spreading of legionella in the line system of the drinking water installation.

There are special technical rules for the construction and maintenance of drinking water installations. According to the drinking water regulation, water samples are regularly taken and examined from large facilities and public buildings, as well as facilities for commercial purposes. If a certain concentration of legionella is documented, this must be reported to the health authority.

The following *safety measures* can help prevent mass reproduction of legionella in the hot-water system of a residential building:

- ▶ Generally, the water lines should be used regularly and dead strands in the line system should be avoided to prevent water standstill in the lines.
- ▶ In a house with central hot-water heating and storage, the controller temperature for the drinking water heater should be at least 60°C. The water temperatures in the line system should never drop below 55 °C.

There is no vaccination against legionella.

Where can I find out more?

Your local health authority can provide you with further advice. Since legionella infections must be reported, they will also have the latest information and be very experienced in dealing with the disease.

More (specialist) information is also available online from the Robert Koch Institute (www.rki.de/legionellen).

For more information on how hygiene can guard against infection, please visit the Federal Centre for Health Education website (www.infektionsschutz.de).



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Editor:

Federal Centre for Health Education, Cologne.
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Drawn up in cooperation with the Bundesverband der Ärztinnen und Ärzte des Öffentlichen Gesundheitsdienstes e.V. and in coordination with the Robert Koch-Institute.

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