

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 that are a natural content of surface waters and ground water in small numbers.

Legionella procreate best at temperatures between 25°C and 45°C. They are killed above 60°C and will hardly procreate below 20°C. Particularly in artificial water systems such as building water lines, the pathogen finds good growth conditions due to the present temperatures. 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 or water taps, as well as cooling towers and air conditioning systems. In public baths, waterfalls, whirl pools and fountains they may cause infection.

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

Important: Transfer from person to person has not been observed yet!

What symptoms do the patients show?

Legionella cause two different symptoms in persons:

Legionnaire's disease / legionella pneumonia

Legionnaire's disease or, medically speaking, legionella pneumonia is a severe form of pneumonia. Chest and head pain, cough, chills and high fever at 39°C to 40.5°C will develop very quickly. There may be drowsiness up to severe confusion. Sometimes, there will be stomach ache with diarrhoea and vomiting. The pneumonia will often take a severe progress and take about 4 weeks. It may be fatal in about every tenth patient.

Pontiac fever

This type is more common than legionella pneumonia and has a milder course, without pneumonia. It starts with flu-like symptoms such as fever, feeling unwell, head and limb pain. Chest pain and coughing are possible as well. Confusion, however, is rare. This usually heals on its own within 2 to 5 days. Lasting damage or deaths are not known.

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, older persons and smokers are particularly at risk. This also applies to persons who take medication to suppress the body's immune system. They develop various complications more often as well. These mostly affect the brain and kidneys. 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.
- ▶ Pontiac fever usually is not influenced by antibiotics. Usually, only symptoms, such as the fever, are treated.
- ▶ 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 construction and maintenance of drinking water installations. According to the drinking water regulation, water samples are regularly taken from large facilities and public buildings, as well as facilities for commercial purposes and examined. 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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