

Fact sheet

Legionellosis

What is legionellosis?

Legionellosis refers to several illnesses caused by *Legionella* bacteria. Most often, the bacteria cause a serious type of pneumonia (lung infection) called **Legionnaires' disease**. The bacteria can also cause a less serious infection, called **Pontiac fever**, that has symptoms similar to a mild case of the flu.

In rare cases, the bacteria can cause an infection outside of the lungs, such as in a wound or a graft.

How is legionellosis spread?

Legionella bacteria are found naturally in freshwater environments, such as lakes and streams. It can become a health concern when the bacteria grows and spreads in human-made water systems such as:

- Showers and faucets
- Cooling towers (air conditioning units for large buildings)
- Hot tubs and swimming pools
- Decorative fountains and water features
- Hot water tanks and heaters
- Large plumbing systems

Most people become infected when they breathe in tiny water droplets in the air containing the bacteria. Legionellosis does not spread person to person.

What are the signs and symptoms of legionellosis?

Legionnaires' disease frequently begins with the following signs and symptoms:

- Headache
- Muscle pain
- Chills
- Fever that may be 104°F (40°C) or higher

Other symptoms may develop by the second or third day, including:

- Cough, which may bring up mucus and sometimes blood
- Shortness of breath
- Chest pain
- Gastrointestinal symptoms, such as nausea, vomiting, and diarrhea
- Confusion or other mental changes

Severe Legionnaires' disease can lead to life-threatening complications, including:

- respiratory failure. This occurs when the lungs can no longer provide the body with enough oxygen or can't remove enough carbon dioxide from the blood.
- septic shock. This occurs when a severe, sudden drop in blood pressure reduces blood flow to vital organs, especially to the kidneys and brain.
- acute kidney failure. This is the sudden loss of your kidneys' ability to filter waste material from your blood. When your kidneys fail, dangerous levels of fluid and waste accumulate in your body.

When not treated effectively and promptly, Legionnaires' disease may be fatal, especially if your immune system is weakened by disease or medications.

Pontiac fever commonly begins with fever and muscle aches. Other flu-like symptoms may appear. Pontiac fever rarely leads to severe complications or death.

How long after exposure do symptoms appear?

The time between a person's exposure to the bacteria and the onset of illness for Legionnaires' disease is 2–10 days (usually 5–6 days); for Pontiac fever, it is shorter, generally a few hours to 3 days (usually 1–2 days).

Who is most at risk?

You're more likely to develop an infection if you:

- smoke. Smoking damages the lungs, making you more susceptible to all types of lung infections.
- have a weakened immune system as a result of illness or certain medications, especially corticosteroids or drugs taken to prevent organ rejection after a transplant.
- have a chronic lung disease (such as emphysema) or another serious condition such as cancer, diabetes, or kidney disease.
- are 50 years of age or older.

Legionnaires' disease sometimes occurs in hospitals and nursing homes, where people are vulnerable to infection.

How is legionellosis diagnosed?

- People with Legionnaires' disease have pneumonia, which can be confirmed by chest x-ray. Two types of tests are used to

determine if a patient's pneumonia is caused by Legionella: a urine test and a laboratory test that involves taking a sample of sputum (phlegm) or washing from the lung.

- A urine or blood test may also be used to determine if a person has Pontiac fever. However, a negative test result doesn't rule out that a person has it.

How is legionellosis treated?

Legionnaires' disease is treated with antibiotics. The sooner treatment is started, the less likely the chance of life-threatening complications or death. In many cases, treatment requires hospitalization.

Pontiac fever goes away on its own without treatment and causes no lingering problems.

How can legionellosis be prevented?

The most important thing you can do to lower your risk of infection is to avoid smoking. Preventing bacterial growth in human-made water systems can also prevent infections. This requires careful cleaning and disinfection of cooling towers, pools, and hot tubs (spas). Disinfectant and other chemical levels should be checked regularly, and temperature ranges should be monitored.

Where can I get more information?

- Your personal healthcare provider
- [Utah Department of Health and Human Services](#)
- [CDC](#)

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