

# Tularaemia

## Susceptible species

Tularaemia is a rare zoonosis. It can affect wild lagomorphs and rodents and can be transmitted to wild and domestic animals and to humans. Most human infections are associated with contact with infected European hares.

## Distribution area

Tularaemia occurs sporadically in Europe, Asia and North America.

## Causative agent

Tularaemia is a bacterial disease caused by the gram-negative bacterium *Francisella (F.) tularensis*.

## Transmission

Transmission can occur by contact of skin or mucous membranes with infectious animal material, by ingestion of insufficiently cooked contaminated meat or water, rarely also by bites of infected blood-sucking insects or ticks, contaminated dust or aerosols. Human-to-human transmission has not been observed.

## Clinical Picture (animal)

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## Clinical Picture (human)

The incubation period in humans usually is 3 to 5 days. Diseased humans show general symptoms such as sudden high fever, malaise, headache, muscle and rheumatic pains. In skin infections painful ulcers at the infection site, local swelling of lymph nodes and fever occur. Infection via conjunctiva usually leads to unilateral conjunctivitis, swollen eyelid, photophobia, lacrimation and local swelling of lymph nodes. If the pathogen is inhaled, pneumonia with dry cough may occur. Contaminated food and beverages may cause ulcers of the pharynx and tonsils. Very rarely, sepsis and death may occur.

## Diagnostics

The pathogen can be cultivated from affected tissue (e.g. spleen of European hares) and detected by molecular diagnostic methods (e.g. PCR). Serological detection of specific antibodies against *F. tularensis* usually is possible 2 to 3 weeks after onset of infection.

## Similar clinical pictures

Often symptoms are unspecific and can also be caused by a multitude of other infections.

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## Control

Tularaemia can be treated with antibiotics. Recommendations can be found in the “[Tularämie RKI-Ratgeber](#)” of the Robert Koch-Institute (in German language). Direct or indirect pathogen detection in combination with an acute infection is notifiable pursuant to Art. 7 Section 1 No. 13 of the Infection Protection Act (IfSG). Disease and detection of the pathogen in hares and rabbits are reportable. When handling the carcass dust and aerosol formation should be avoided and disposable gloves, dust-proof respirator face masks and protective goggles should be worn. Venison should always be cooked thoroughly

prior to consumption. Meat from suspect animals is not suitable for human consumption and should not be cut up further. If there is a risk of exposure insect repellents are recommended. A vaccine exists but is not available in Germany.

## More Information

[Robert Koch-Institut \(RKI\): Handbuch Biologische Gefahren II: Tularämie \(in German language\)](#)

[ECDC webpage on Tularaemia](#)

[World Health Organization \(WHO\): Tularaemia](#)  
[Tularemia International Society](#)