

# Tularemia

## What is tularemia?

Tularemia, also known as rabbit fever and deer-fly fever, is an infectious disease caused by the bacteria *Francisella tularensis*. This Gram-negative bacteria can infect both animals and humans. In the United States, there are two subspecies of *Francisella tularensis* that cause the majority of disease – subspecies *tularensis* (Type A) and subspecies *holarctica* (Type B). Tularemia is relatively rare in Oregon animals.

## What animals can be infected?

*F. tularensis* has been documented in over 200 species of mammals, birds, reptiles, amphibians, and fish. Infection is most common in mammals; small to medium-sized mammals are thought to be the principal animal reservoir. Among wild animals, natural hosts for this bacterium include: rabbits, hares, voles, skunks, squirrels, prairie dogs, muskrat, and beaver. Tularemia can occur in domestic animals including sheep, cats, dogs, pigs, and horses.

## How is it transmitted to humans?

The most common mode of transmission is via a bite from an arthropod (most commonly ticks and biting flies). Other modes of transmission include inhalation of aerosolized bacteria, ingestion of contaminated food or water, or direct contact with the bacteria through the skin or mucous membranes (e.g., handling contaminated objects or infected animals/animal tissues and bites from infected animals). Person-to-person transmission does not occur.

## What are the signs and symptoms in humans?

All individuals are susceptible to tularemia. Symptoms usually occur three to five days after infection. The most common symptoms are “flu-like” (i.e., fever, chills,

head or body aches, malaise, etc.); however, severe illness or death can occur. Tularemia may present in different forms depending on the mode of entry of the bacteria into the body:

**Glandular** (infection through the skin or mucous membranes): swelling of lymph nodes and flu-like symptoms; an ulcer may develop where the contact or bite occurred (then called "Ulceroglandular").

**Oropharyngeal** (infection of the throat via ingestion): sore throat, tonsillitis, and swollen lymph nodes in the neck.

**Oculoglandular** (infection via the conjunctiva): eye infection (often only one eye is affected) and swollen lymph nodes of the head and neck.

**Pneumonic** (infection of the lungs via inhalation or via spread of the bacteria through the bloodstream): severe respiratory symptoms; can occur in combination with any other form of tularemia.

**Typhoidal** (usually develops after infection via inhalation but can occur after skin infection or ingestion): severe flu-like symptoms, systemic illness, can affect multiple organs.

## What are signs of infection in cats and dogs?

Kittens and puppies are most susceptible to infection. Dogs rarely show signs of disease, but may develop a fever, pustule or abscess at the site of infection, and loss of appetite. Common signs in cats include depression, swollen lymph nodes, fever, oral ulcers, and loss of appetite.

## How is it diagnosed?

In humans, history of exposure and a blood test can confirm tularemia infection. In animals, history of exposure and laboratory tests on exudates or body tissues are used.

### How is it treated?

Early recognition and treatment with appropriate antibiotics can help prevent serious illness and death in both humans and animals.

This fact sheet provides general information. Please contact your physician or veterinarian for specific information related to you or your animals.

For more information go to:

- **Centers for Disease Control**

[www.cdc.gov](http://www.cdc.gov)

- **National Association of State Public Health Veterinarians** [www.nasphv.org](http://www.nasphv.org)