



# Occupational Risk of Tularemia

Tularemia is a serious but treatable disease caused by the Gram-negative bacteria *Francisella tularensis*. People can get tularemia through vector-borne, zoonotic, or occupational exposures. This document outlines risk assessment and mitigation in occupational settings as well as testing and management options should exposures occur.

## Assess and Mitigate Exposures



### Microbiological laboratory

Although *F. tularensis* poses a risk for laboratory-acquired infections, such infections have been rare in recent decades due to improved safety practices. Exposure risk is generally greatest when working directly with *F. tularensis* cultures. Clinical specimens from an infected source pose less risk due to the smaller number of organisms present. BSL-2 practices are recommended for initial activities involving clinical materials suspected to contain *F. tularensis*. BSL-3 practices are recommended for manipulations of suspect cultures.

[More information about infection prevention in laboratory settings](#)



### Veterinary and other animal care

Occupational cases of tularemia have occurred among veterinary staff who have cared for or performed necropsies on infected animals. Most infections have occurred through needlestick or scalpel injuries. Exposure can also occur through bites or scratches from infected animals or inhalation of aerosols (e.g., with bone saw use during necropsy). Risk can be mitigated by wearing recommended personal protective equipment including gloves and facial protection during necropsies and respirators during aerosol-generating procedures.

[More information about infection prevention in veterinary settings](#)



### Human health care

Risk of *F. tularensis* transmission in healthcare settings is very low. Human-to-human transmission of *F. tularensis* has not been reported through inhalational exposure or routine clinical contact. Transmission could occur through needlestick injuries (e.g., when draining an infected lymph node). Standard personal protective equipment is recommended when caring for patients with suspected or confirmed tularemia.

[More information about infection prevention in healthcare settings](#)



## Manage and Evaluate Exposures to *Francisella tularensis*

### Management Options



#### Fever watch

Workers monitor their temperature for 14 days after exposure and seek immediate medical evaluation and treatment for tularemia if they develop a fever (defined as a single oral temperature  $\geq 101^\circ\text{F}$  or  $38.3^\circ\text{C}$ ).



#### Post-exposure prophylaxis

Workers start antibiotics as soon as possible within 14 days of exposure. Antibiotic options include:

1. Ciprofloxacin 500 mg orally every 12 hours for 7 days
2. Levofloxacin 500 mg orally every 24 hours for 7 days
3. Doxycycline 100 mg orally every 12 hours for 10-14 days



Due to limited data, there are no established criteria to determine who should undergo fever watch versus immediate prophylaxis. Factors to consider include:

- 1. Time since exposure** The typical incubation period for tularemia is 3-7 days (range 1-14 days). Fever watch may be preferred if much of the incubation period has already passed without developing symptoms.
- 2. Type of exposure** Exposures should be assessed as high- or low-risk depending on the material handled, the mechanism of exposure, safety precautions in use, and proximity to the suspect material. Immediate prophylaxis should be considered for high-risk exposures while fever watch is recommended for lower risk exposures. Examples of potentially high-risk exposures include working with cultures outside a biosafety cabinet, bites from infected animals, needlesticks, scalpel wounds or mucous membrane exposures during necropsies, and aerosol-generating procedures on cultures or tissues conducted without personal protective equipment. Personnel working in the same laboratory where a specimen has been processed by someone else are generally at low risk.
- 3. Personal preference and risk tolerance** Some workers may be more concerned about their risk of infection and prefer immediate prophylaxis, while others may be more concerned about the risks of taking potentially unnecessary antibiotics and prefer fever watch.

### Testing Options

If fever or other concerning symptoms for tularemia develop within 14 days of exposure, the exposed worker should seek immediate medical attention for possible diagnostic testing and treatment. Depending on the clinical circumstance, diagnostic testing for tularemia can include bacterial culture, molecular testing, or serologic testing. If initial serologic testing is negative, testing can be repeated after 2-4 weeks to assess for seroconversion and confirm the diagnosis. Serologic testing of asymptomatic workers after an exposure is generally not helpful.

