



# TULAREMIA

1. **Agent:** *Francisella tularensis*, a pleomorphic, gram-negative coccobacillus.
2. **Identification:**
  - a. **Symptoms:** Focal ulcer at the site of entry of the bacteria, regional lymphadenopathy, fever, prostration, myalgia, and headache. Pneumonia accompanied by pleurisy, or a typhoid fever-like illness possible.
  - b. **Differential Diagnosis:** Bubonic plague, typhoid fever, sporotrichosis, influenza, tuberculosis pulmonary, brucellosis, cat scratch fever, infectious mononucleosis.
  - c. **Diagnosis:** Serology, culture of *F. tularensis* from lesion or blood, identification of organism by fluorescent antibody, or  $\geq$  4-fold rise in antibody titers between acute and convalescent sera.
3. **Incubation period:** 2-10 days, usually 3 days.
4. **Reservoir:** Numerous wild animals, e.g., beavers, lagomorphs (rabbits and hares), muskrats, and some domestic animals; various hard ticks.
5. **Source:** Infected blood and tissue of animals and arthropods, contaminated water, dust containing the bacteria.
6. **Transmission:** Inoculation of mucous membranes, skin, or eye after handling infected tissue; bite of infective vector, i.e., ticks, deerflies, and mosquitoes; bite of carnivore with mouth contaminated by eating infected carcass (rare); ingestion of contaminated water or inadequately cooked meat; inhalation of contaminated dust.
7. **Communicability:** Not person-to-person. Agent may be found in blood during the first 2 weeks of the disease and in lesions more than a month after onset. Deer flies are infective for up to 14 days; ticks are infective for life.
8. **Specific Treatment:** Streptomycin or gentamicin are drugs of choice; tetracyclines, chloramphenicol.
9. **Immunity:** Long term.

## REPORTING PROCEDURES

1. **Reportable.** *California Code of Regulations*, Section 2500.
2. **Report Form:** **TULAREMIA CASE REPORT (CDPH 8559)**
3. **Epidemiologic Data:**
  - a. Contact with animals, especially rabbits, muskrats, prairie dogs and other rodents. Hunting, skinning, or eating infected animals. Domestic cats are susceptible and have been known to transmit the bacteria to humans.
  - b. History of ticks, deer fly, or mosquito bites.
  - c. Rarely humans can acquire tularemia by inhaling dust or aerosols contaminated with *F. tularensis* bacteria. This can occur during farming or landscaping activities, especially when machinery (e.g. tractors or mowers) runs over infected animals or carcasses.
  - d. Source of food and water.
  - e. Location of lesions.
  - f. Occupation and exact address.
  - g. Travel to endemic areas during incubation period.
  - h. Names and addresses of contacts with same exposure as case.

## CONTROL OF CASE, CONTACTS & CARRIERS

Investigate immediately upon receipt of report.  
Investigated by ACDC.



**CASE:**

Isolation: Wound and body fluid precautions.

**CONTACTS:** No restrictions.

**CARRIERS:** Not applicable.

**PREVENTION-EDUCATION**

1. Cook game thoroughly; do not rely on freezing or smoking to kill the agent.
2. Do not drink untreated water.
3. Avoid handling or being bitten by ticks, deerflies, and mosquitoes in endemic areas.
4. Use insect repellants.
5. Use impermeable gloves when dressing game.
6. Wear a mask, impermeable gloves, gown, and eye protection when working with cultures of *F. tularensis* in the laboratory.
7. Live attenuated vaccine is available for occupational risk groups, (e.g., laboratory personnel who work with the organism), from

U.S. Army Medical Material Activity, Attn:  
SGRD-UMB, Fort Detrick, Frederick, MD  
21701-5009, USA.

**DIAGNOSTIC PROCEDURES**

1. **Serology** Paired sera required

**Container:** Serum Separator Tube (SST)

**Laboratory Form:** **Miscellaneous (H-378).**

**Examination Requested:** Tularemia.

**Material:** Whole, clotted blood.

**Amount:** 8-10 ml.

**Storage:** Refrigerate.

**Remarks:** Obtain acute specimen as soon as possible and convalescent serum at 3 and 5 weeks after onset. Send each specimen to Public Health Laboratory as soon as it is collected.

2. For material other than blood, consult Public Health Laboratory, Bacteriology.