

TYPHUS, FLEA-BORNE (Murine Typhus, Endemic Typhus)

1. **Agent:** *Rickettsia typhi* and *R. felis*, pleomorphic, obligate intracellular coccobacillus.
2. **Identification:**
 - a. **Symptoms:** Variable onset with severe headache, chills, fever, myalgias. A macular rash may appear 3-5 days after onset. Untreated disease seldom lasts longer than 2 weeks of fever. The disease is mild in young children. A milder course, seasonality, sporadic distribution, and the absence of lice help differentiate this disease from louse-borne typhus.
 - b. **Differential Diagnosis:** Influenza-like illness, viral exanthems, other rickettsial diseases.
 - c. **Diagnosis:** Typhus fever group antibodies (IgG, IgM) by IFA; must be confirmed by species-specific IFA. Complement fixation (CF) becomes positive by second week. Cases are confirmed by a single high IgM titer or a fourfold rise in antibodies to *R. typhi*. The Weil-Felix Proteus OX-19 test is not diagnostic.
3. **Incubation:** 1-2 weeks, commonly 12 days.
4. **Reservoir:** Rats, opossums, outdoor cats.
5. **Source:** Infected fleas.
6. **Transmission:** Infected fleas defecate during feeding and contaminate the bite site and other breaks in the skin.
7. **Communicability:** Not person to person. Fleas are infective for life.
8. **Specific Treatment:** Tetracyclines or chloramphenicol.
9. **Immunity:** Generally lifelong, but reinfection can occur.

REPORTING PROCEDURE

1. **Reportable.** *California Code of Regulations*, Title 17, Section 2500.

2. **Report Form:** LAC DHS MURINE TYPHUS CASE REPORT FORM (acd-typhus, 7/02 fillable).

3. Epidemiologic Data:

- a. Occupation and outdoor hobbies.
- b. History of flea bites, presence of animals, i.e., rats, cats, opossums, and fleas at work or home.
- c. Travel to or residence in endemic areas. In California, the north central and some eastern sections of Los Angeles County, as well as Orange, Santa Barbara, San Bernardino and San Diego Counties are endemic areas.

CONTROL OF CASE, CONTACTS & CARRIERS

Investigate case within 3 days.

CASE:

Isolation: None.

CONTACTS: No restrictions.

CARRIERS: Not applicable.

PREVENTION-EDUCATION

Control fleas, pets, and wild animals around work or home. Homes should be rodent-proof, yards clear of heavy undergrowth and debris, pet food should not be left outside to discourage harborage by wild animals.

DIAGNOSTIC PROCEDURES

Clinical and epidemiologic history required to aid in the selection of laboratory tests.

1. **Serology:** Paired sera required.

Container: Serum separator tube (SST)

Laboratory Form: Test Requisition and Report Form H-3021 or online request if electronically linked to the Public Health Laboratory.

Test requested: Typhus Serology.

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Material: Whole clotted blood

Amount: 8-10 ml.

Storage: Refrigerate.

Remarks: Collect first (acute) blood specimen as soon as possible. Collect second (convalescent) blood approximately 2 weeks after the first. Send each specimen to Public Health Laboratory as soon as it is collected.