



# BRUCELLOSIS

(Undulant fever, Malta fever, Mediterranean fever, Bang's disease)

1. **Agent:** *Brucella* species, gram-negative cocco-bacillus.
2. **Identification:**
  - a. **Symptoms:** A systemic infection with acute or insidious onset, characterized by continued, intermittent, or irregular fever, headache, weakness, sweating, chills, arthralgia, and generalized aching. The disease may last for several days, many months, or occasionally several years. Recovery is usual but disability is often pronounced. Relapses occur in about 5% of treated cases up to 3 months after onset. Fatality is 2% or less, and is higher for *B. melitensis* infections. Clinical diagnosis is often difficult.
  - b. **Differential Diagnosis:** Febrile illnesses without localizing signs, such as infectious mononucleosis, lymphoma, malaria, and typhoid.
  - c. **Diagnosis:** Isolation of organisms by culture from blood, bone marrow, etc.; four-fold rise in acute- and convalescent-phase titers obtained at least 2 weeks apart; or agglutination titer of  $\geq 1:160$ .
3. **Incubation:** Variable, usually 5-60 days; occasionally several months.
4. **Reservoir:**

*Brucella abortus* - Cattle  
*B. suis* - Pig  
*B. melitensis* - Sheep, goat  
*B. canis* - Dog
5. **Source:** Any unpasteurized milk product; tissues, blood, urine, vaginal discharge, aborted fetuses (especially placentas) from infected animals.
6. **Transmission:** Direct contact, inhalation, or ingestion.
7. **Communicability:** No evidence of transmission from person to person.

8. **Specific Treatment:** Rifampin plus doxycycline.

**Alternatives:** Tetracycline or TMP/SMX. Use streptomycin or gentamicin for endocarditis or serious infection.

9. **Immunity:** Duration uncertain.

## REPORTING PROCEDURES

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

2. **Report Form:**

## BRUCELLOSIS CASE REPORT (CDPH 8607)

3. **Epidemiologic Data**

- a. Relapses
- b. Recent undiagnosed illness.
- c. Occupation and location: farmer, dairyman, slaughterhouse worker, butcher, veterinarian, kennel workers, and persons handling animals and animal by-products.
- d. Contact with cattle, swine, goats, sheep, horses, and dogs.
- e. Use and source of unpasteurized milk, other dairy products or imported foods, especially cheese.
- f. Travel history for 10 months prior to onset.

## CONTROL OF CASE, CONTACTS & CARRIERS

Investigate within 7 days.

### CASE:

**Isolation:** None

### CONTACTS:



No restrictions. Search for others who may have shared possible common exposure.

Consult Public Health Laboratory before submitting specimen.]

**CARRIER:** Not applicable.

### PREVENTION-EDUCATION

1. Educate persons working in slaughterhouses, packing plants, butcher shops and farms as to the nature of the disease and how to minimize the risk in handling carcasses or products of animals.
2. Search for infection among livestock by the agglutination reaction. Check with the County or State Veterinarian. Infection among cattle and swine requires slaughter of infected animals.
3. Pasteurize milk and dairy products from cows, sheep, or goats. Boil milk when pasteurization is impossible. Educate public to not consume unpasteurized dairy products.
4. Handle and dispose of discharges and fetuses from animal abortions with care. Disinfect contaminated areas.
5. Inspect meat and condemn carcasses of diseased swine. (Not a useful procedure for cattle or goats.)
6. Advise cases of possible recurrence of symptoms on re-exposure.

### DIAGNOSTIC PROCEDURES

1. **Serology:** Agglutination.

**Container:** Serum separator tube.

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

**Examination Requested:** Brucellosis.

**Material:** Clotted blood.

**Amount:** 8-10 ml.

**Storage:** Refrigerate until transported.

2. **Culture**