

BRUCELLOSIS

Background:

Brucellosis is usually a zoonotic disease caused by one of four species of *Brucella*: *B. abortus*, *B. canis*, *B. melitensis* and *B. suis*. The most common route of exposure in the United States is by ingestion of contaminated milk and dairy products. Cutaneous transmission through abrasions is possible. Weaponized *Brucella* species would involve an inhalational exposure.

Incubation Period:

Usually ranges from 5 days to more than 6 months post exposure (usually 5 to 30 days).

Signs/Symptoms:

The clinical features of brucellosis are extremely variable and differ based on which category of infection is present. Categories can be divided into acute, undulant and chronic forms.

- 1) Acute Form (<8 weeks from onset): "flu-like" symptoms including fever, profuse sweating, malaise, anorexia, headache, myalgia and back pain. Neurologic infection and pericarditis or endocarditis may occur in severe cases.
- 2) Undulant Form (<1 year from onset): may display undulant fevers, arthritis and orchiepididymitis in young males.
- 3) Chronic Form (>1 year from onset): symptoms may mimic chronic fatigue syndrome, with episodes of depression.

Laboratory and Diagnostic Testing:

Call the local department of health and IDPH with any suspected *Brucella* exposure and for further diagnostic testing recommendations.

- 1) A serum agglutination test for anti-brucella antibodies is the usual diagnostic method. This test should be repeated two weeks after blood draw.
- 2) Brucellosis can also be diagnosed by blood or bone marrow cultures.

Treatment:

Chemoprophylaxis for the exposed, asymptomatic patient is not recommended. No human vaccine for brucellosis is available.

(see tables, next page)

Category	Initial Treatment	Duration
Adults	Doxycycline: 200 mg/day PO q d and Streptomycin: 1 g IM per day or Rifampin: 600 mg PO per day	Doxycycline: 6 weeks Streptomycin: 2 to 3 weeks Rifampin: 6 weeks
Children >8 years	Doxycycline: 2-4 mg/kg/d PO QID or divided BID; not to exceed 200 mg/d and Streptomycin: 1 g IM per day or Rifampin: 15-20 mg/kg/d PO	4 to 6 weeks
Children ≤ 8 years	Trimethoprim-sulfamethoxazole (TMP-SMX): 8-10 mg/kg/d (based on trimethoprim); not to exceed 2 double-strength tab/d and Rifampin: 15-20 mg/kg/d PO	45 days
Children >8 y with meningitis,* endocarditis, or osteomyelitis	Doxycycline: 2-4 mg/kg/d PO QD or divided BID; not to exceed 200 mg/d and Streptomycin: 20 mg/kg/d IM; not to exceed 1 g/d or Gentamicin: 3-5 mg/kg/d IM/IV divided q8h	Doxycycline: 4 to 6 months Streptomycin: 1 to 2 weeks Gentamicin: 1 to 2 months
Children ≤ 8 y with meningitis,* endocarditis, or osteomyelitis	TMP-SMX: 8-10 mg/kg/d PO divided BID (based on TMP component) Rifampin: 15-20 mg/kg/d PO	4 to 6 months
Pregnant adults and adolescents	TMP/SMX: 200 mg/day PO once daily and Streptomycin: 1 g IM per day or Rifampin: 600 mg PO per day	TMP/SMX: 6 weeks Streptomycin: 2 to 3 weeks Rifampin: 6 weeks

*Use of corticosteroids as adjunctive therapy to antibiotics may be of benefit in culture-proven meningitis.

Surgical Care:

Surgical intervention may be required to drain pyogenic joint effusions or rare paraspinal abscesses.

Adapted from World Health Organization's guidelines on treatment of Brucellosis.

If you suspect a poisoning exposure from any bioterrorism agent, immediately contact your local county health department, and the Illinois Poison Center at 1-800-222-1222.