



Brucellosis Case Definitions

<https://ndc.services.cdc.gov/case-definitions/brucellosis-2010/> Accessed 12 December

Brucellosis (*Brucella* spp.) 2010 Case Definition

CLINICAL DESCRIPTION

An illness characterized by acute or insidious onset of fever and one or more of the following: night sweats, arthralgia, headache, fatigue, anorexia, myalgia, weight loss, arthritis/spondylitis, meningitis, or focal organ involvement (endocarditis, orchitis/epididymitis, hepatomegaly, splenomegaly).

LABORATORY CRITERIA FOR DIAGNOSIS

Definitive

- Culture and identification of *Brucella* spp. from clinical specimens.
- Evidence of a fourfold or greater rise in *Brucella* antibody titer between acute- and convalescent-phase serum specimens obtained greater than or equal to 2 weeks apart.

Presumptive

- *Brucella* total antibody titer of greater than or equal to 160 by standard tube agglutination test (SAT) or *Brucella* microagglutination test (BMAT) in one or more serum specimens obtained after onset of symptoms
- Detection of *Brucella* DNA in a clinical specimen by PCR assay.

Case Classification

Probable

A clinically compatible illness with at least one of the following:

- Epidemiologically linked to a confirmed human or animal brucellosis case.
- Presumptive laboratory evidence, but without definitive laboratory evidence, of *Brucella* infection.

Confirmed

A clinically compatible illness with definitive laboratory evidence of *Brucella* infection

Last Reviewed: April 16, 2021 

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Liu, B., et al. . **2023**. *Epidemiology, clinical manifestations, and laboratory findings of 1,590 human brucellosis cases in Ningxia, China. Frontiers in Microbiology. 14, 10.3389/fmicb.2023.1259479.*

Case definition and diagnosis metrics

The diagnosis of human brucellosis was based on serological tests, clinical manifestations, and epidemiological information. The Rose Bengal plate test (RBPT) and serum agglutination test (SAT) were utilized for brucellosis screening and diagnosis (Araj, 2010). A diagnosis of brucellosis was confirmed when the RBPT yielded positive results and the standard tube agglutination test showed a titer of $\geq 1:100$, or when the duration of the disease course was more than 1 year with a titer of $\geq 1:50$. Cultures of blood or other tissue samples are not routinely performed at this hospital due to biosafety concerns (Liu et al., 2022). According



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Mohd, G., et al. . 2023. Brucellosis among fever patients attending a primary health centre in rural South India. The Journal of Infection in Developing Countries. 17, 1628-1630. 10.3855/jidc.17692.

Rose Bengal Plate Test (RBPT)

Microagglutination test (MAT),

Indirect ELISAs (NovaTec Immundiagnostica GmbH, Dietzenbach, Germany) were performed per the kit protocols to detect Brucella-specific IgM and IgG. Absorbance values of samples and controls were converted into NovaTec Unit (NTU) and reported as positive (> 11 NTU), equivocal (9-11 NTU), and negative (< 9 NTU).

A fever case that tested positive for both agglutinating antibodies (RBPT or MAT) and soluble antibodies (IgG/ IgM ELISA) was considered a confirmed case of brucellosis [1,10].

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Jamir, T., et al. **2020**. *Brucellosis in patients with pyrexia of unknown origin in Assam, India: A retrospective record review. The Lancet Global Health. 8, S28. 10.1016/S2214-109X(20)30169-8.*

We defined a case as *Brucella-positive* if a Rose Bengal plate test or serum agglutination test, or both, were positive along with IgM or IgG positivity

More than half of pyrexia of unknown origin (PUO) cases were brucellosis cases in dairy farm workers who had brucellosis-positive animals on their farms.

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Al-Ani, F., et al. . **2023**. *Human and animal brucellosis in the Sultanate of Oman: an epidemiological study. The Journal of Infection in Developing Countries.* 17, 52-58. 10.3855/jidc.17286.

The diagnosis of brucellosis is based on **positive cultures** of *Brucella spp* in blood, bone marrow, cerebrospinal fluid and other body fluids or tissue samples; **and/or clinical findings consistent with brucellosis with positive serology test results.**

Serological testing was performed using Remel agglutinating sera for both *B. abortus* and *B. melitensis*. A titre of ≥ 1 in 80 is considered positive.



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Varikkodan, et al. **2024**. Demographic characteristics, laboratory features and complications in 346 cases of brucellosis: A retrospective study from Qatar. *IJID Regions*. 10, 18-23. 10.1016/j.ijregi.2023.11.007.

A confirmed case was defined as a clinically compatible illness with the identification of *Brucella species* in the culture of a clinical specimen.

A **presumptive case** was defined as a clinically compatible disease with a ***Brucella* antibody titer of greater than or equal to 1: 160 by standard tube agglutination test.**