
Bartonellosis

Frequently Asked Questions

1. What is bartonellosis?

Bartonellosis is a zoonotic disease caused by bacteria of the genus *Bartonella*. Several *Bartonella* species are known to cause disease in humans, including *Bartonella henselae*, *Bartonella quintana* and *Bartonella bacilliformis*. The disease occurs worldwide and has been reported in Africa, the Americas, Asia and Europe. Cats are the main reservoir of *Bartonella henselae*, the cause of cat-scratch disease, which is the most common form of human bartonellosis. The severity of disease ranges from mild, self-limiting illness to severe infection involving multiple organs, particularly in immunocompromised individuals.

2. How is bartonella transmitted?

Transmission depends on the *Bartonella* species involved. While cats are the main reservoir for *B. henselae*, other animals including dogs, rodents and wild mammals can also carry *Bartonella* species. The most common route of infection in humans for *Bartonella henselae* is from a scratch or bite from an infected cat, particularly kittens. Cat fleas play an important role in maintaining infection among cats. Human infection with *Bartonella vinsonii* (dog reservoir) has also been reported in South Africa (SA). Rodent-borne species including *B. elizabethae*, *B. grahamii*, *B. tribocorum*, and *B. rochalimae* can also cause disease in humans, and their role is particularly important in Africa, including in SA. *Bartonella quintana* is transmitted by the human body louse, specifically via louse faeces rather than bites, and is associated with conditions of overcrowding and poor sanitation. In endemic areas of South America, *Bartonella bacilliformis* is transmitted by infected sand flies.

Transmission between humans is uncommon, however, rare cases of transmission through organ transplantation have been documented.

3. Who is at risk of bartonellosis?

People who have close contact with cats are at increased risk of infection with *Bartonella henselae*. Veterinarians, animal health staff, animal welfare workers, and pet owners may be at increased risk

because of their frequent exposure to animals. Individuals exposed to fleas or body lice are also at risk. People experiencing homelessness, those living in overcrowded conditions, and individuals with limited access to hygiene facilities are at increased risk of infection with *Bartonella quintana*. Immunocompromised individuals, including people living with HIV infection, are at increased risk of developing severe or disseminated bartonellosis.

4. How does bartonella affect animals?

Most infected cats do not show signs of illness and may carry the bacteria in their bloodstream for prolonged periods. Fleas are important in transmitting infection between cats. Many domestic and wild mammals may be infected with different *Bartonella* species and can serve as reservoirs for infection, contributing to the maintenance and spread of *Bartonella* bacteria in nature.

5. What are the signs and symptoms of bartonellosis?

Clinical presentations depend on the infecting species and the immune status of the patient. The main disease syndromes are:

Causative species: *B. henselae*

- Cat scratch disease: A red papule or pustule develops at the inoculation site 3–5 days after a cat scratch or bite. Regional lymphadenopathy (most commonly axillary, cervical, or inguinal) develops 1–3 weeks later and may persist for weeks to months. Low-grade fever, fatigue, and weight loss may occur. In 5–20% of cases, atypical manifestations arise, including Parinaud’s oculo-glandular syndrome (conjunctival granuloma with preauricular lymphadenopathy), neuroretinitis, encephalopathy, and rarely osteomyelitis or pneumonia.
- Peliosis hepatis: Vascular proliferation in the liver, causing blood-filled spaces, seen primarily in HIV-positive patients. Considered the visceral counterpart of bacillary angiomatosis.

Causative species: *B. quintana*

- Trench fever: Incubation period is 15–25 days. Symptoms include sudden fever (which may recur every 5 days, giving rise to the alternative name “5-day fever”), severe headache, shin and bone pain, rash, and inflamed eyes.

Causative species: *B. quintana* and *B. henselae*

- Bacillary angiomatosis: Characteristic vascular skin lesions resembling Kaposi’s sarcoma, occurring predominantly in immunocompromised patients (especially those with HIV/AIDS). Involvement of the liver, spleen, bone marrow, and lymph nodes may occur.
- Infective endocarditis: Fever, night sweats and loss of weight are common symptoms of this serious but uncommon complication.

Causative species: *B. bacilliformis*

- Oroya fever (Carrión’s disease): Fever, pallor, and haemolytic anemia

6. How is bartonellosis diagnosed?

Diagnosis of bartonellosis requires correlation of clinical, epidemiological, and laboratory findings. Misdiagnosis is common, and clinicians should maintain a high index of suspicion, particularly in HIV-positive patients, who may present atypically.

Bartonella infection may be diagnosed through serological testing (e.g. IFA or ELISA detecting IgG and IgM antibodies), PCR using blood or tissue samples, or culture. Culture provides definitive confirmation but requires specialised enriched media and prolonged incubation. Culture is also rarely successful in routine labs due to *Bartonella*'s slow growth, and endocarditis cases are often culture-negative. Histopathological examination with Warthin–Starry silver staining may also identify *Bartonella* organisms in tissue biopsy samples.

7. How is bartonellosis treated?

Treatment is tailored to the clinical syndrome and the immune status of the patient. Cat scratch disease is usually self-limiting and may not require treatment, although azithromycin can be used for lymphadenopathy. More severe infections, such as bacillary angiomatosis, peliosis hepatis, trench fever, and infective endocarditis are treated with prolonged antibiotic therapy, commonly doxycycline with or without gentamicin. Infective endocarditis may also require valve replacement surgery. Oroya fever is treated with ciprofloxacin, and the associated severe anaemia may require blood transfusion.

8. How can bartonellosis be prevented?

There is currently no vaccine against bartonellosis. Prevention is based on reducing exposure to the vectors and reservoir animals. Measures include avoiding rough play with cats, promptly and thoroughly cleaning wounds with soap and water, controlling flea infestations in pet cats, eliminating body lice through good hygiene and laundering of clothing, and preventing sandfly bites in endemic areas through the use of insect repellent, protective clothing, and bed nets.

For healthcare workers and laboratory personnel, standard precautions should be observed when handling clinical specimens. Laboratory staff should be notified when *Bartonella* infection is suspected to allow appropriate culture conditions. *Bartonella* species are sensitive to commonly used disinfectants.

9. Where can I find out more information?

Medical/clinical-related queries:

- NICD Hotline +27 800 212 552 (for use by healthcare professionals only)

Laboratory-related queries: Centre for Emerging, Zoonotic and Parasitic Diseases

- Dr Jenny Rossouw +27 011 555 0584 jennryr@nicd.ac.za
- Special Bacterial Pathogens Laboratory: +27 011 555 0331/0306

References:

- Centers for Disease Control and Prevention. (2025). About Bartonella infection. <https://www.cdc.gov/bartonella/about/index.html>
- Breitschwerdt, E. B., & Kordick, D. L. (2010). Bartonellosis. *Veterinary Microbiology*, 140(3–4), 347–359. <https://doi.org/10.1016/j.vetmic.2009.11.011>
- Al-Mekhlafi, H. M., et al. (2025). Bartonellosis in the World Health Organization Eastern Mediterranean Region: A systematic review and meta-analysis. *Open Veterinary Journal*, 15(5), 1895–1906. <https://doi.org/10.5455/OVJ.2025.v15.i5.5>
- Billeter, S. A., Levy, M. G., Chomel, B. B., & Breitschwerdt, E. B. (2016). Vector transmission of Bartonella species with emphasis on the potential for tick transmission. *Parasites & Vectors*, 9, 261. <https://doi.org/10.1186/s13071-016-1546-x>
- Trataris AN, Rossouw J, Arntzen L, Karstaedt A, Freaan J. Bartonella spp. in human and animal populations in Gauteng, South Africa, from 2007 to 2009. *Onderstepoort J Vet Res*. 2012 Jun 20;79(2):452. <https://doi.org/10.4102/ojvr.v79i2.452>
- Boodman, C., Gupta, N., Nelson, C.A., van Griensven, J. (2024) Bartonella quintana endocarditis: a systematic review of individual cases. *Clinical Infectious Diseases*, 78(3), 554–561. doi.org/10.1093/cid/ciad706
- Chomel, B.B., Boulouis, H.J., Breitschwerdt, E.B. (2004). Cat scratch disease and other zoonotic Bartonella infections. *Journal of the American Veterinary Medical Association*, 15;224(8),1270-9. [doi: 10.2460/javma.2004.224.1270](https://doi.org/10.2460/javma.2004.224.1270)
- Chomel, B.B., Boulouis, H.J., Maruyama, S., Breitschwerdt, E.B. (2006). Bartonella spp. in pets and effect on human health. *Emerging Infectious Diseases*, 12(3),389-94. [doi: 10.3201/eid1203.050931](https://doi.org/10.3201/eid1203.050931)
- Rolain, J.M., Brouqui, P., Koehler, J.E., Maguina, C., Dolan, M.J., Raoult, D. (2004) Recommendations for treatment of human infections caused by Bartonella species. *Antimicrobial Agents Chemotherapy*, 48(6), 1921–1933. [doi: 10.1128/AAC.48.6.1921-1933.2004](https://doi.org/10.1128/AAC.48.6.1921-1933.2004)