

Cat Scratch Disease

What is cat scratch disease, and what causes it?

Cat scratch disease (CSD), also known as *cat scratch fever* or *human bartonellosis*, is a disease of humans, not of cats. Although a cat scratch is often associated with the disease, this is not believed to be the means by which infection occurs. A microorganism called *Bartonella henselae* is the most common cause of this disease.

Although a cat scratch is often associated with CSD, a microorganism called *Bartonella henselae* is the most common cause of this disease.

What are the symptoms?

The typical symptoms are mild fever, chills, and lethargy (fatigue) accompanied by enlarged lymph nodes and lesions on the skin or conjunctiva (the membrane that covers the white of the eye and inside of the eyelid). Most symptoms last for a few days,



but the enlarged lymph nodes may persist for weeks or months.

Human doctors have traditionally been taught that CSD is a mild, self-limiting infection (one that typically goes away on its own, without the need for medication or other intervention). Although this is true for most cases, *B. henselae* and several other *Bartonella* species can occasionally cause chronic, asymptomatic, or intermittently symptomatic illness. In these cases, a more severe disease can develop, with any combination of the following signs: arthritis, enlarged liver and spleen, high fever, nervousness, pneumonia, and weight loss. These more serious forms of the disease are often associated with underlying immunodeficiency states, such as in people with HIV/AIDS or individuals undergoing chemotherapy. However, at this time, we do not fully understand why some people contract a more serious form of human bartonellosis.

Where did human bartonellosis originate?

Before 1990, there were only two known pathogenic or disease-causing *Bartonella* species, *Bartonella quintana* (the agent of trench fever in World War I) and *Bartonella bacilliformis* (the agent of Oroya fever in Peru and other South American countries). These two diseases were known to infect people but were not yet recognized as a disease in pets, domestic animals, or humans in North America. Since 1990, more than 24 *Bartonella* species have been identified; at least half of these have been implicated or confirmed as animal or human pathogens. Beginning in the early 1990s, *Bartonella* organisms have been a focus of considerable scientific research and medical inquiry. Veterinary healthcare professionals are considered the sentinel group for human bartonellosis (meaning veterinary professionals are considered the individuals in which the disease would appear first and be most prevalent), and several studies are examining the prevalence and spread of the disease within this group.

One important fact we do know is that cats aren't the only carriers of *Bartonella*. Currently, 27 species of animals that may harbor the *Bartonella* organism have been identified. Of course, not all of these can infect humans, but research is ongoing to identify those animals that can. There are still many questions about human bartonellosis to be answered.

How common is cat scratch disease?

It is not possible to give accurate estimates of the prevalence of CSD because not all cases are diagnosed or reported. However, it is thought to be a somewhat uncommon disease. Surveys carried out in the United States indicate that about 5% of the population has been exposed to infection, but only a small percentage of these people reported having the disease. It is likely that many human *Bartonella* infections go unnoticed without symptoms and appear to be nothing more than a mild “cold.” Once infected, most humans seem to develop some form of immunity against *Bartonella*. Kittens are more likely than adult cats to be infected and to pass the bacterium to people. Experts believe that about 40% of cats carry *B. henselae* at some point in their lives. Cats that carry *B. henselae* do not show any signs of illness; therefore, you cannot tell which cats can spread the disease.

The term cat scratch disease incorrectly implies that cats are the only source of transmission and infection.

The term *cat scratch disease* also incorrectly implies that cats are the only source of transmission and infection. Although cats are a major reservoir for *B. henselae* and other *Bartonella* species that can cause human disease, some people infected with *Bartonella* have no history of a cat scratch or bite wound, and others have had no known contact with cats. In these people, transmission from environmental sources, various biting insects, or other animal hosts is likely.



How do humans become infected?

Although many cases of CSD follow a scratch from a cat, this is not universally true, as mentioned above. A few cases have occurred in people with no apparent contact with cats. Recent evidence suggests that the major route of cat infection with *B. henselae* is by a flea bite. Infected cats carry the microorganism in their blood, where it can be present in extremely high numbers. When a flea feeds on an infected cat, it ingests large numbers of the *B. henselae* organisms, some of which it is speculated may make their way into a human the next time the flea takes a meal. However, so far there is no evidence that a bite from an infected flea can give you CSD. A primary concern is that a cat bitten by a *B. henselae*-infected flea will leave excrement (flea dirt) on the cat that can be transmitted to humans and cause the disease.

Flea control and prevention are key to preventing CSD in humans.

Cats remain infectious for a few weeks, after which the organism disappears from the blood. It is not clear whether cats can be reinfected. There are no reported cases of any person being infected more than once. There is still much to be learned about the actual disease transmission and process of CSD. What we do know is that flea control and prevention are key to preventing CSD in humans.

Is there a vaccine or treatment for cat scratch disease?

The disease is typically self-limiting, and the majority of cases will resolve without the need for antibiotics.

There is currently no CSD vaccine available for cats or people. *B. henselae* is sensitive to a number of antibiotics, and a combination of two different types of antibiotics is most often prescribed to treat infected humans. The disease is typically self-limiting, and the majority of mild cases will resolve without the need for antibiotics.

Is there a test for cat scratch disease?

There are tests available, especially for humans thought to have contracted human bartonellosis. For animals, the tests aren't as reliable and should be considered only after thoroughly discussing the pros and cons of the current diagnostic tests with your veterinarian.

Will declawing my cat help reduce the risk of spreading cat scratch disease?

There is currently no scientific consensus on the role of declawing and CSD prevention. Because *B. henselae* is transmitted by fleas and other biting insects, flea prevention is important in reducing the risk of CSD transmission. It is not the cat's claws that cause the disease. It is infected flea dirt under the claws that is transmitted into the human body when scratched. The disease can also be transmitted by getting infected flea feces on our hands and transferring it into an eye or open wound. Transmission of CSD has also been reported from bite wounds. This is thought to occur because a cat licked infected flea feces from its skin and the organism was present in the saliva when it bit a human.

What steps can I take to reduce my risk of CSD?

- Keep your cat's nails trimmed short.
- Keep all your pets on year-round flea control.
- Keep your cat indoors.
- Avoid rough play with your cat.
- Wash any bites or scratches immediately with soap or disinfectant.

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