

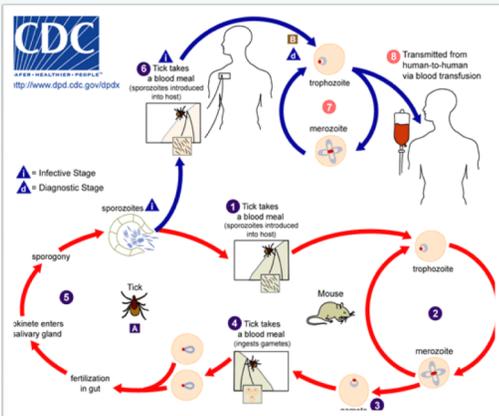


## Background

Human babesiosis is a parasitic infection caused by species of the protozoan *Babesia*, most commonly *B. microti*. The organism invades the erythrocytes causing them to lyse. The infection is transmitted through the Ixodes tick, which is commonly found on white mice and white tailed deer. The tick must be attached to its host for more than 36-48 hours to transmit the parasite. Babesiosis outbreaks most commonly occur in the Northeastern region of the United States due to the greater proximity of vectors to humans.

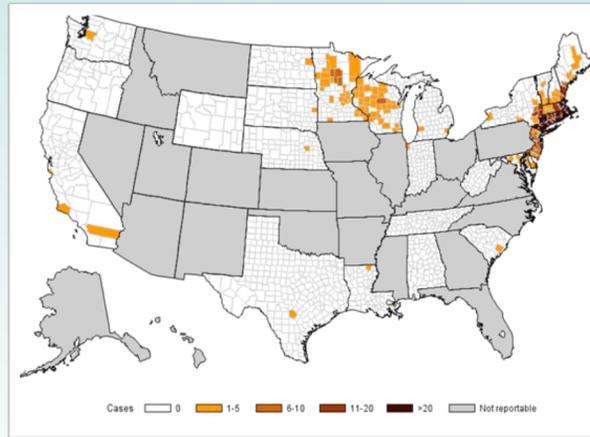
## Risk Factors

Babesiosis occurs more often during spring and summer months, in regions where the Ixodes tick is commonly found. Those who spend more time outdoors in wooded areas or areas of high grass and shrubbery are at an increased risk of contracting babesiosis. Although less common, babesiosis can also be spread through blood transfusions from a donor who has an unknown *Babesia* infection and presents without symptoms.



## Epidemiology

A total of 1,744 incidences of babesiosis were reported in the United States in 2014. The highest incidence was found in: Massachusetts (537), New York (437), Connecticut (205), Rhode Island (172), and New Jersey (159). The highest rates per state in 2014 were found in: Rhode Island (16.3), Massachusetts (8.0), Connecticut (5.7), Maine (3.2), New Hampshire (3.2), New York (2.4), and New Jersey (1.8).



## Signs and Symptoms

Patients who are infected can have a range of symptoms from asymptomatic to severe manifestations, including hospitalizations and mortality. Mild presentation consists of nonspecific, flu-like symptoms such as: (a) fever, (b) body aches, (c) nausea, and (d) fatigue. Immunocompromised patients, such as those who are: (a) asplenic, (b) HIV-infected, or (c) fighting malignancy, are more likely to experience severe symptoms and complications. These include (a) hemolytic anemia, (b) very low platelet count, (c) malfunction of vital organs, and (d) death.

## Diagnosis and Treatment

Those who detect a tick bite should seek medical attention and undergo diagnostic lab testing for *Babesia* parasites in the blood. Most patients who are asymptomatic do not require treatment. Ill patients are treated for 7-10 days with a combination of two antibiotics. The two options include atovaquone and azithromycin or clindamycin and quinine for severely ill patients. Supportive treatment such as antipyretics and vasopressors may also be helpful.

## Prevention

Preventative measures can be taken to lower the risk of babesiosis infection such as: (a) avoiding areas of high grass and shrubbery, (b) frequently mowing the lawn, (c) wearing long clothing when spending time outdoors, (d) checking oneself, children, and pets after spending times outdoors, (e) avoiding going off trails in wooded areas, and (f) wearing long pants that are tucked into socks if planning on spending time in areas where ticks are present.

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