



BORRELIA MIYAMOTOI DISEASE

What is *Borrelia miyamotoi* disease?

Borrelia miyamotoi disease (*B. miyamotoi* disease), also known as hard tick-borne relapsing fever, is an emerging tick-borne disease. The bacteria that causes *B. miyamotoi* disease is only distantly related to the bacteria that causes Lyme disease.

This bacterium was first discovered in 1995 in ticks from Japan, but has since been detected in the blacklegged/deer tick (*Ixodes scapularis*) and the western blacklegged/deer tick (*Ixodes pacificus*) in the United States. The first human case in the United States was reported in 2013, but *B. miyamotoi* disease is currently not a nationally notifiable disease.

How is *Borrelia miyamotoi* spread in the United States?

B. miyamotoi bacteria are transmitted by the bite of an infected blacklegged/deer tick (*Ixodes scapularis*) or by the bite of an infected western blacklegged/deer tick (*Ixodes pacificus*).

What are the symptoms of *Borrelia miyamotoi* disease?

Symptoms include fever, chills, muscle aches, fatigue, joint pain, and headaches. Some patients also report that their fever comes and goes (relapsing fever). There is no bulls-eye rash, unlike patients with Lyme disease.

How soon do symptoms occur?

Symptoms usually occur within seven days of infection.

How is *Borrelia miyamotoi* disease diagnosed?

Blood tests are used to determine if a person may be infected with *B. miyamotoi*. Polymerase chain reaction (PCR) tests are used to detect *B. miyamotoi* DNA or serologic tests are used to detect antibodies for *B. miyamotoi* infection.

What is the treatment for *Borrelia miyamotoi* disease?

B. miyamotoi infections are treated with physician-prescribed antibiotics.

Should an infected person be excluded from work or school?

No, an infected person does not need to be excluded from work or school.



What can a person or community do to prevent the spread of *Borrelia miyamotoi* disease?

The most important way to prevent your chances of becoming infected with *B. miyamotoi* is to prevent tick bites:

- Wear light-colored clothing when outdoors.
- Tuck pant legs into socks so ticks cannot crawl up the inside of the pants.
- Use Environmental Protection Agency (EPA) registered insect repellents containing DEET, picaridin, or oil of lemon eucalyptus (OLE).
- Treat clothing and gear with products containing 0.5% permethrin. Permethrin can be used to treat boots, clothing, and camping gear and it remains protective through several washings. Alternatively, you can buy permethrin-treated clothing and gear.
- When outdoors, stay on the center of trails. Ticks crawl on the tips of grasses and shrubs and crawl on people and animals when they brush against the vegetation.

Resources

Centers for Disease Control and Prevention, <https://www.cdc.gov/relapsing-fever/miyamotoi/index.html>.