December 2024 | Page 1 of 2

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH FACT SHEET

*Borrelia miyamotoi*

What is *Borrelia miyamotoi*?

*Borrelia miyamotoi* is a bacterium (germ) that can be spread by tiny, infected black-legged (deer) ticks. These bacteria have only recently been discovered as a cause of some human illness.

## **Where do cases of *Borrelia miyamotoi* infection occur?**

*Borrelia miyamotoi* was identified in black-legged ticks in New England in 2001 and has also been found in these ticks in the Great Lakes region and in similar ticks in California, Europe, and Russia.

## **How are the bacteria spread?**

Like Lyme disease, *Borrelia miyamotoi* is spread by the bite of an infected black-legged tick. These ticks in Massachusetts can also carry the germs that cause babesiosis, human granulocytic anaplasmosis, and Powassan virus. Black-legged ticks can spread more than one type of germ in a single bite.

## **When can I get *Borrelia miyamotoi*?**

Young ticks (nymphs) are most active during the warm weather months between May and July. Adult ticks are most active during the fall and spring, but will also be out searching for a host any time that winter temperatures are above freezing.

**Is this disease common?**

*Borrelia miyamotoi* infection is less common than Lyme disease, Anaplasmosis, and Babesiosis in Massachusetts, but true numbers remain to be established as testing capacity develops for this disease.

## **What are the symptoms of infection with *Borrelia miyamotoi*?**

Human infections with *B. miyamotoi* were first described in 2011 in Russia. Most of the patients had fever or chills, headache, and muscle aches. It was uncommon to have symptoms such as the erythema migrans rash (bull’s-eye rash), arthritis, or facial palsy. Information from cases in the United States is similar, and all reported patients recovered.

**Is there treatment for disease caused by *Borrelia miyamotoi*?**

Infection with *Borrelia miyamotoi* can be treated with two weeks of antibiotics.

Did you know?

You don’t have to be a hiker on Cape Cod to worry about ticks. In Massachusetts, you can be bitten in your own back yard. There are lots of things you can do around your own backyard to make it less inviting for ticks! Visit the MDPH Tick-borne Disease Website at <http://www.mass.gov/dph/tick> for suggestions.

December 2024 | Page 2 of 2

**What can I do to lower my chances of getting any disease from ticks?**

**Prevention begins with you!** Take steps to reduce your chances of being bitten by any tick. Ticks are most active during warm weather, generally late spring through fall. However, ticks can be out any time that temperatures are above freezing. Ticks cling to vegetation and are most numerous in brushy, wooded, or grassy habitats. When you are outside in an area likely to have ticks (e.g. brushy, wooded or grassy places), follow these simple steps to protect yourself and your loved ones:

* Use a repellent with **DEET** (the chemical N-N-diethyl-meta-toluamide) or **permethrin**. Repellents containing DEET should not be used on children less than 2 months of age and should be used in concentrations no higher than 30% on older children. Permethrin products are intended for use on items such as clothing, shoes, bed nets and camping gear and should not be applied to skin. Other repellents, such as picaridin, oil of lemon eucalyptus and IR 3535, have also been found to provide protection against ticks. More information on choosing a repellent and how to use repellents safely is included on the MDPH Public Health Fact Sheet on Tick Repellents at <http://www.mass.gov/dph/tick>.
* Wear long, light-colored pants tucked into socks or boots, and a long-sleeved shirt. This may be tough to do when the weather is hot, but it will help keep ticks away from your skin and help you spot a tick on your clothing faster.
* Stay on trails when walking or hiking, avoiding the edge habitat where ticks are likely to be.
* Showering immediately after potential tick exposure may help remove unattached ticks.
* Talk to your veterinarian about tick control options (tick collars, repellents) for your pets.

**After spending time in an area likely to have ticks, check yourself, your children and pets for ticks**. Young ticks, called nymphs, are the size of a poppy seed. Adult black-legged ticks are the size of a sesame seed. Both nymph and adult ticks can spread diseases ticks carry; however, nymphs are often of more concern. They are aggressive feeders and so tiny that it can be difficult to see them on the body, unless you look carefully. When doing a tick check, remember that ticks like places that are warm and moist. Always check the back of the knees, armpits, groin, scalp, back of the neck and behind the ears. If you find a tick attached to your body, remove it as soon as possible using fine-point tweezers. Do not squeeze or twist the tick’s body, instead grasp it close to your skin and pull straight out with steady pressure.

**Know the symptoms of tick-borne disease**. If you have been someplace likely to have ticks and you develop symptoms of any disease carried by ticks, see your health care provider right away.

**Where can I get more information?**

* **For questions about your own health**, contact your doctor, nurse, or clinic.
* **For questions about diseases spread by ticks**, contact the MDPH at (617) 983-6800 or online at [www.mass.gov/dph](http://www.mass.gov/dph)/tick. You may also contact your local Board of Health.
* **Health effects of pesticides,** MDPH, Bureau of Climate and Environmental Health at 617-624-5757.