

## Beyond Lyme, new illnesses, more reason to watch for ticks

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In this March 18, 2002 file photo, a deer tick is seen under a microscope in the entomology lab at the University of Rhode Island in South Kingstown, R.I. Lyme disease makes the headlines but new research highlights the latest in a growing list of tick-borne threats. (AP Photo/Victoria Arocho, File)

Lyme disease makes the headlines but there are plenty of additional reasons to avoid tick bites. New research highlights the latest in a

growing list of tick-borne threats—a distant relative of Lyme that's easy to confuse with other illnesses.

Monday's study suggests a kind of bacteria with an unwieldy name—*Borrelia miyamotoi*—should be on the radar when people in Lyme-endemic areas get otherwise unexplained summertime fevers. It's one of several recently discovered diseases linked to ticks in different parts of the country, a reminder to get tick-savvy no matter where you live.

"People need to be aware of what tick-borne diseases are in their area," says Dr. Peter J. Krause of Yale University, a specialist who reviewed the research. "And they should know how to avoid ticks."

#### WHAT'S THIS NEW INFECTION?

The first U.S. case was reported in 2013 in New Jersey, an 80-year-old cancer survivor who over four months became increasingly confused, had difficulty walking and lost 30 pounds. Doctors found spiral-shaped bacteria in her spinal fluid that looked like Lyme but caused a relapsing fever more closely related to some other tick-borne illnesses. While treatable by antibiotics—the woman recovered—doctors know little about *B. miyamotoi*.

Monday's study offers some clues. Researchers with Imugen Inc., a Massachusetts testing lab, tested blood samples from patients in Massachusetts, Rhode Island, New Jersey and New York whose doctors suspected tick-borne illnesses and used that lab. During the 2013 and 2014 tick seasons the lab found 97 cases of the new infection. That's roughly 1 percent of samples tested and close to the lab's detection of a better-known tick disease named anaplasmosis, researchers reported in *Annals of Internal Medicine*. More research is needed to determine just how prevalent the disease is.

Researchers then analyzed medical records from 51 of those patients, and found symptoms typically include a high fever, severe headache, chills and blood abnormalities—decreases in infection-fighting and blood-clotting cells. About a quarter of patients were hospitalized, although Imugen medical director Dr. Philip Molloy cautioned that's probably because doctors are seeking testing only for their sickest, most puzzling patients.

The bacterium is carried by deer ticks, also known as blacklegged ticks, which also can spread Lyme and two other illnesses, babesiosis and anaplasmosis.

## IT'S NOT THE ONLY NEW WORRY

Two new tick-borne viruses were recently discovered in the Midwest, and neither has a specific treatment.

The Centers for Disease Control and Prevention has confirmed nine cases of Heartland virus, and one death, with other reports under investigation, said CDC entomologist Roger Nasci. Symptoms include fever, fatigue, headaches, muscle aches, diarrhea and low blood counts. Identified in Missouri, the virus also was reported in Tennessee and Oklahoma, although the Lone Star tick that spreads it lives around the East and Southeast.

Then there's the Bourbon virus, with similar symptoms, discovered last year after the death of a Kansas man and named for his home county. Another patient, in Oklahoma, recovered. The Kansas man had found an embedded tick days before getting sick, and CDC researchers are searching for the culprit species.

## HOW MANY DISEASES CAN TICKS SPREAD?

The CDC counts 14 illnesses linked to specific U.S. tick species, not including the Bourbon virus still being studied.

Lyme is the most common, with about 30,000 cases reported each year, although CDC has estimated that the true number could be 10 times higher. It's too early to know how widespread the newly discovered illnesses are. But people can be infected with more than one tick-borne illness simultaneously, complicating care.

## NO REASON TO STAY INDOORS

Health officials stress that it's important to enjoy the outdoors and get physical activity. Infections are more common in some parts of the country than others, and there are effective protections.

"A lot of people get very concerned about any tick bite," said Nasci, who heads CDC's arboviral diseases branch. "Not every tick is infected."

If you are bitten, remove the tick as soon as possible.

## PREVENTION IS BEST

No matter where you live, CDC's advice is similar.

—Shower soon after being outdoors to spot ticks more easily, and check pets that can carry ticks inside.

—If you've been in [tick](#)-infested areas, carefully do a full-body check, including under arms, behind knees, ears and hair.

—When in the woods, walk in the center of trails, avoiding brush and leaf litter.

—Use bug repellent with DEET on exposed skin, or wear long pants and long sleeves.

—Discourage ticks around homes by keeping grass cut; removing leaf litter and brush; and placing a barrier of wood chips or gravel between lawns and wooded areas.

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