An estimated 500 cases of Lyme disease were reported in Canada in 2013, up from 128 in 2009.

Laura Eggertson, Ottawa, Ont. July 22, 2014

Ask Laura Weeks the best way to remove a tick, and she names the options. There’s the traditional straight-on tweezer pull, the counter-clockwise twist with a special tick-removal device, or popular folk remedies like rubbing the tick with olive oil or using dish soap applied on a cotton ball before covering the tick with a Band-Aid.

“I’ve done a lot of research,” says Weeks, who is a senior research fellow with an integrative oncology clinic.

But Weeks isn’t researching tick removal as part of her job. She’s obsessed with ticks because she lives in Perth, Ontario, currently a hot-bed of tick-borne bacterial infection such as Lyme disease, caused by *borrelia burgdorferi.*
“There are a few people in the community who have been affected by Lyme quite severely,” says Weeks. “When you see people unable to work and there’s no treatment, it’s worrisome.”

In fact, antibiotics are an effective treatment for Lyme disease, particularly in its early phrases. However, inadequate testing for the bacteria, confusion over what — if anything — to do in the immediate aftermath of a tick bite, and uncertainty about which ticks transmit infection are contributing to the concerns in rural areas where Lyme is increasing.

Once endemic to the United States, Europe and parts of Asia, Lyme is now well-established in British Columbia’s southern mainland and Vancouver Island, and parts of Manitoba, Quebec, New Brunswick, Nova Scotia and southern and eastern Ontario. Ticks bearing the bacteria may also be in other parts of Canada, the Public Health Agency of Canada (PHAC) cautions.

The changing climate is partly responsible for the recent spread of Lyme disease, according to PHAC. In 2013, there were an estimated 500 cases of Lyme disease reported in Canada, up from 128 in 2009, when Lyme became a reportable disease. There are likely three times as many people suffering from the under-reported disease, says Steven Sternthal, acting director general of PHAC’s Centre for Food-borne, Environmental and Zoonotic Infectious Diseases. The number of cases is expected to climb to more than 10 000 Canadians annually by the 2020s, Sternthal recently testified at the parliamentary Standing Committee on Health. There are an estimated 300 000 cases per year in the United States.

Not all Canadian doctors are aware that Lyme disease is even in Canada, Sternthal told the committee. The committee studied proposed legislation to create a national Lyme disease strategy, a bill currently making its way through the Senate before its expected passage later this year.
Jim Wilson, president of the Canadian Lyme Disease Foundation says medical professionals aren’t getting adequate guidance about how they should treat the bite of any tick that could be carrying *borreliosis*. “There’s an awful lot of harm being done by current [medical] practices.” Medical advice varies doctor to doctor and region to region.

One Ontario patient who spoke to *CMAJ* reported being told by both Telehealth and emergency department staff that he needed a tetanus shot after a tick bite. Tetanus is not an effective treatment or prevention against Lyme disease.

Other patients report being told they should have the tick tested before beginning treatment. Some patients say they were prescribed one or two doses of antibiotics immediately after a bite. Still others say doctors told them not to worry about treatment unless they exhibit symptoms.

The Lyme disease *foundation advises that anyone bitten* should remove the tick and be prescribed 21 to 28 days of a broad-spectrum antibiotics, such as doxycycline, without waiting for test results to determine whether the tick was carrying Lyme or any other infection. Wilson says the three- to four-week antibiotic regimen is standard in Europe.

Current tests may return false negatives depending upon how soon they are administered and those available in Canada do not capture all strains of *Borelliosis*, according to PHAC. “The agency is committed to improving diagnostic testing,” Sternthal testified.

Meanwhile, *PHAC recommends* doctors diagnose patients on the basis of their clinical assessment, rather than relying on lab tests. Once patients have early symptoms, PHAC recommends 14 to 21 days of antibiotic treatment.

Dr. Allen Steere, the Massachusetts physician who published the first conclusive account of Lyme disease in 1977, says not all patients
present with the classic bulls-eye shaped skin rash that many doctors look for to diagnose Lyme. Steere, an infectious disease specialist at the Center for Immunology and Inflammatory Diseases at Massachusetts General Hospital, believes that chronic Lyme disease exists and can result from misdiagnosis as another type of illness or lack of treatment initially.

The best advice for people is to prevent tick bites, by avoiding tick-infested areas, using repellant, tucking pants into socks and wearing closed-toed shoes, and conducting daily tick checks.