

Preventing Lyme disease – vaccines are on the horizon

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As warmer weather approaches, many Canadians look forward to getting outdoors to enjoy summer time activities. Whether you're hiking, camping, golfing, bird-watching, or just walking the dog, beware of ticks.¹

When infected black-legged ticks bite and remain attached for 24 hours, they transmit a bacteria called *Borrelia burgdorferi*, which causes Lyme disease. The bite is usually painless,¹ which is why doing a full body check for ticks after being outdoors is an important preventive measure.²

Lyme disease develops in stages. It usually begins with a red rash - often resembling a bull's eye - around the bite location, which expands over the next few days to a size to 5 cm or more.²

Other early symptoms are less distinctive, and may include tiredness, fever, chills, headache, aching muscles and joints, and neck stiffness. In some cases, especially without treatment, these can escalate several weeks after infection to cause joint pain and stiffness, and affect the liver, heart and nervous system.²

Cases of Lyme disease in Canada have increased from 144 in 2009 to 2,634 in 2019, and between 2020 and 2021, increased by 150 per cent to reach almost 2,900 reported cases last year.

You can check Lyme disease risk area map for Canada [here](#).³

“We see essentially an epidemic of Lyme disease in Canada and in North America, a changing range that is driven in part by a warming climate that has allowed these ticks to invade into new environments,” explains Dr. Robbin Lindsay of the National Microbiology Laboratory in

Winnipeg.⁴

On the bright side, increasing infection rates seems to have spurred renewed interest in developing a vaccine to protect against the disease.⁵

Of several different vaccines being developed, the furthest along is VLA15 developed by Pfizer and Valneva. VLA15 is a 3-dose vaccine currently in Phase 3 clinical trials with 6,000 participants who are at least 5 years old in the U.S. and Europe. This vaccination triggers development of antibodies that block a protein, OspA, on the surface of the disease-causing bacterium that ticks carry, before it leaves the tick. Results of earlier studies are encouraging – vaccination provoked a strong immune response in adults and kids "with acceptable safety and tolerability profiles," according to the drug companies.⁵

Another approach developed at [MassBiologics](#), – Lyme Pre Exposure Prophylaxis (Lyme PrEP) – is to be studied in a phase 2-3 trial starting this spring. This is monoclonal antibody that binds to the surface of the bacteria. Like VLA15, this medication targets and disables the OspA protein, so there is no need to wait to develop antibodies – the shot provides immunity within days or even hours.⁵

And finally, a third [Lyme disease vaccine](#) being developed by researchers at the Yale School of Medicine is intended to work by recognizing tick saliva, and generating a skin reaction that makes it hard for the ticks to hang on, and quickly produces redness at the site of bite, so the tick can be removed before the bacterium can be transmitted. This more generalized response to tick saliva has the potential to prevent other tick-borne infections.⁵

Interestingly, the growing awareness that Lyme disease, like COVID-19, can have long-lasting effects has led to 15 specialized clinics being established in Quebec in 2019, to offer treatment and to study the effects and treatment of the two potentially debilitating conditions. While the vaccines are being studied, awareness and basic common sense preventive strategies are key to avoiding infection.⁶

For more information on Lyme Disease, please visit our [Vaccines411.ca Lyme Disease resource page](#).

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This information should not be used as a substitute for the medical care and advice of your doctor. There may be variations in treatment that your physician may recommend based on individual facts and circumstances.

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Sources

Note: the hyperlinks that direct to other sites are not continuously updated. It is possible that some links become untraceable over time. Thank you.

1. Lyme Disease: Prevention and risks.

<https://www.canada.ca/en/public-health/services/diseases/lyme-disease/prevention-lyme->

[disease.html](#)

2. Lyme disease: IPAC Canada.

<https://ipac-canada.org/lyme-disease>

3. Lyme disease: Surveillance.

<https://www.canada.ca/en/public-health/services/diseases/lyme-disease/surveillance-lyme-disease.html>

4. Lyme Disease Under Climate Change. Climate Atlas Canada.

<https://climateatlas.ca/lyme-disease-under-climate-change>

5. Lyme disease is on the rise. Why is there still no vaccine? AAMC news.

<https://www.aamc.org/news-insights/lyme-disease-rise-why-there-still-no-vaccine>

6. New Montreal clinic will be part of Quebec network studying long COVID-19, Lyme disease. Canadian Lyme Disease Foundation.

<https://canlyme.com/2022/11/27/new-montreal-clinic-will-be-part-of-quebec-network-studying-long-covid-19-lyme-disease/>