

Lyme Disease in West Virginia

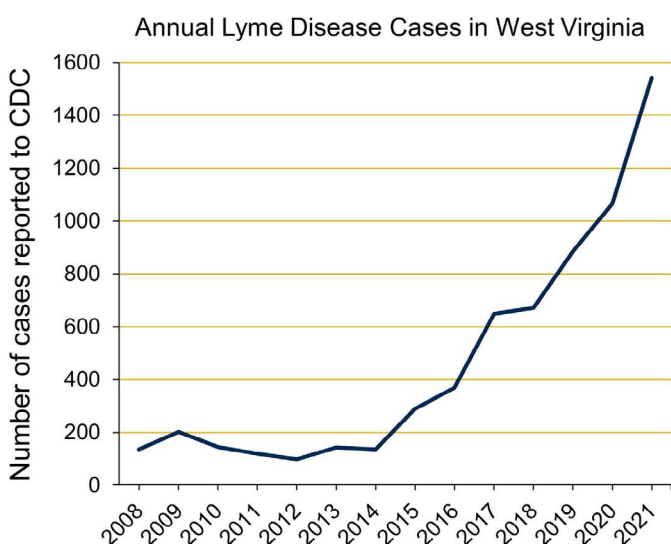
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Tick-borne diseases, particularly Lyme disease, have been a problem of increasing magnitude in West Virginia over the past decade. This Science and Technology Note discusses the presence of the disease in West Virginia and potential actions that could be taken to lessen its impact.

Lyme Disease Cases on the Rise in West Virginia

The number of [reported cases](#) of Lyme disease in West Virginia has dramatically increased over the past decade, from 297 in 2016 to 1,542 reports in 2021. [Most counties](#) in West Virginia had confirmed or probable cases of Lyme disease between 2000-2014.

The graphic below describes recent increases in annual cases of Lyme disease reported to the CDC in West Virginia.



Source: [Lyme Disease Data Tables: Historical Data](#)

The number of Lyme disease cases and tick encounters is expected to increase due to anticipated increases in precipitation.



Source: [WV Department of Tourism](#)

Research Highlights

- Lyme disease cases in West Virginia have dramatically increased over the past decade and are expected to continue increasing.
- West Virginia currently lacks the information needed to effectively manage Lyme disease.
- West Virginia University researchers are investigating ways to prevent, detect, and treat the disease.

Costs of Lyme Disease in the US

Lyme disease presents a significant economic burden to society. CDC research estimates the following:

- The total annual cost of Lyme disease to the [US in 2016 was between \\$345-968 million](#).
- Average treatment cost to patients were \$1,200
- Average societal cost per case was \$2,000.
- Early detection and treatment [could reduce costs by at least half](#)

Thus, prevention and early detection can be key to reducing the overall costs created by Lyme disease. However, current testing is often unreliable until a few weeks after the infection starts.

WVU Research on Tick-Borne Disease

Several initiatives at West Virginia University are working to advance the prevention, detection, reporting, and treatment of tick-borne diseases.

- To improve early detection of Lyme disease, and two other tick-borne diseases, [Dr. Soumya Srivastava](#) is developing a new technology to detect the disease at an early stage.
- [Dr. Timothy Driscoll](#) is working to understand why some tick-borne Rickettsioses (a group of diseases including Rocky mountain spotted fever) are deadly while others are not.
- A team of WVU researchers are collaborating to [develop a vaccine for Lyme disease](#). Dr. Mariette Barbier, Dr. Driscoll, and Dr. Heath Damron hope to prevent cases of Lyme disease with a first-of-its-kind vaccine.

Beyond WVU, others such as [Pfizer and Moderna](#) are working to develop a human Lyme disease vaccine.

Preventing Lyme Disease

Lyme disease can be passed to humans through a bite from a blacklegged, or “deer,” tick. Symptoms vary but often include a bulls-eye rash at the bite site and a fever. If not detected and treated early, life-long symptoms such as arthritis can occur.

[According to the CDC](#), tick exposure can occur any time of the year, but is most common during warmer months. To prevent tick bites, you can take these simple actions:

- Do your research. Ticks live in grassy, brushy, or wooded areas. Be aware if you are entering a place that might house ticks.

- Use EPA-registered insect repellent. Anyone age three and older should apply repellent before going into areas where ticks might be encountered. You can also treat clothes and gear.
- Stay on the trail. Avoid especially brushy or leafy areas.
- When returning indoors, check all clothing, pets, and your body for ticks.
- Shower soon after returning indoors; this can help reduce tick bites by washing off unattached ticks.
- Remove ticks immediately if found on body or pet. Using tweezers, grasp the tick behind the head and gently and slowly pull it off.

See the [Maine Center for Disease Control & Prevention](#) for additional tips.



The image above shows the black legged tick, a species of tick that carries and transmits Lyme disease to humans. This species is common to the state of West Virginia.

Source: [University of Rhode Island](#)

State Actions to Protect Against Lyme Disease and Tick-Borne Illness

West Virginia	In 2018, West Virginia passed legislation requiring health insurance coverage for Lyme disease treatment.
Maine	Maine has a deer tick and Lyme disease data tracking portal to help residents with early prevention and treatment solutions.
New York, Michigan, and Wisconsin	New York, Michigan, and Wisconsin all passed legislation requiring warning signage in state parks to inform hikers of the risk ticks pose and prevention.
Others	Sixteen states, not including West Virginia, are currently participating in CDC's BRACE (Building Resilience Against Climate Effects) effort. States receive funding and expert guidance on planning for expected future changes in public health.

This Science & Technology Note was written by Christian Shockey and Dr. Brooke Eastman on behalf of the Bridge Initiative for Science and Technology Policy, Leadership, and Communications. Please see <https://scitechpolicy.wvu.edu/> or contact scitechpolicy@mail.wvu.edu for more information.