

Tick-borne Powassan virus can kill. What is it, and how can you protect yourself?

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Robert Weymouth, 58, of Portland, Maine, died this year because of a

tick bite.

You've likely heard of Lyme disease and the problems it can cause when passed to a human through the bite of a deer tick. But Lyme isn't the only tick-borne illness in the woods.

Powassan virus—a rare and untreatable infection—is also transmitted by ticks. That's the bite that led to fatal complications in the case of this Maine truck driver.

Weymouth—the third Powassan death since 2015 in Maine and the first this year—likely contracted the virus in the state, according to Maine's Centers for Disease Control and Prevention. He developed [neurological symptoms](#) and died in the hospital.

His widow, Annemarie Weymouth, is now warning others about protecting themselves from the illness.

"He was in there, but he couldn't move his body. He could point to words on a board. He pointed to 'scared,' 'afraid,' 'frustrated,'" Weymouth told CBS News.

True case numbers unknown

"Because it's relatively rare to make the diagnosis, there's a lot we don't know," said Dr. Eugene Shapiro, a professor of pediatrics and epidemiology at Yale School of Medicine.

But here's what is known:

The U.S. Centers for Disease Control and Prevention received 189 reports of Powassan infection between 2012 and 2021.

Most U.S. cases of Powassan virus happen in the Northeast and Great Lakes regions. Maine had four cases last year alone.

Though ticks are arachnids like spiders, the virus is not so different from some viruses in which a mosquito is the vector, such as dengue and Zika. Other than its transmission by a tick, Powassan virus is "in no way, shape or form anything like Lyme disease," Shapiro said.

Powassan virus is closely related to something called tick-borne encephalitis, which is a virus particularly seen in Central Eastern Europe and Eurasia, Shapiro said.

The Powassan virus severely affects only a small number of people each year. But it's possible many others are asymptomatic or have minor or flu-like symptoms and aren't diagnosed.

The virus got its name from its discovery in a 5-year-old boy who died of the virus in the late 1950s in Powassan, Ontario, Canada.

Experts think it used to be transmitted primarily by the groundhog tick, which typically did not feed on humans. Instead, it fed mostly on skunks, groundhogs and squirrels, Shapiro said.

At some point, it moved to deer ticks, and those are ticks that commonly bite humans.

Brain inflammation

There are still many mysteries to unravel concerning Powassan virus. For example, although some research has suggested that as many as 5% of deer ticks in some areas of Connecticut are positive for the virus, that's not showing up in high numbers of Powassan human infection, Shapiro said.

But cases are rising, according to CDC numbers, said Dr. Nicole Baumgarth, an immunologist at Johns Hopkins School of Public Health. Yet it's not clear whether there are actually more people becoming infected or if doctors are testing for it more frequently, she said.

"There is no treatment, other than sort of general support of an individual who has the disease," Baumgarth said. "The most serious illness associated with Powassan is inflammation of the brain, or encephalitis, but not everybody who gets infected with this virus will develop these very severe cases."

Other symptoms can include fever, chills, fatigue, rash on trunk of the body, [muscle weakness](#), nausea, vomiting, dizziness and neck stiffness, according to Yale Medicine.

However, the vast majority of those infected likely will have no symptoms or minor symptoms and not be diagnosed.

For those who do have symptoms severe enough to be diagnosed, typically with encephalitis, the death rate is somewhere between 10% and 30%, Shapiro said.

Keep in mind, however, it is rare. "It is a little scary, but it is a [rare disease](#)," Baumgarth said.

With Lyme disease, the tick has to be attached for about a day or so to transmit its infection. Pulling the tick off promptly puts you at low risk of infection. If it's been longer, a single dose of doxycycline is moderately effective in preventing infection. However, Baumgarth noted that the Powassan pathogen can be transmitted faster than Lyme bacteria, "so it's hard to outrun that."

Prevention is the best cure

You can take some precautions to limit tick exposure when spending time in grassy or wooded areas that can harbor ticks, Baumgarth and Shapiro said.

- Wear long sleeves and long pants, with the bottoms of the pants tucked inside socks.
- Wear light-colored clothing so that any ticks might be visible. Remove them right away.
- Use an [insect repellent](#) that has 30% DEET. Another repellent, permethrin, is meant to be applied to clothing.
- After you return from hiking, wash clothes and place in a hot dryer. If it's hot enough, that will kill ticks.
- Check yourself for ticks after you return, shower immediately and have someone else check in places you can't see, if possible.

More information: The U.S. Centers for Disease Control and Prevention has more on the [Powassan virus](#).

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