

Tick population, Lyme disease risk at peak in area woodlands

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“Stay on the trails,” IUP biology professor Dr. Tom Simmons recommended for hikers in White’s Woods to avoid contact with high numbers of black legged ticks. Simmons said July is a peak time for nymphal ticks, prevalent on overgrown ground, to bite people and transmit Lyme disease.

Submitted photo

An Indiana University of Pennsylvania professor said the presence of black-legged ticks, especially those carrying the bacteria that causes Lyme disease, has reached its peak in White’s Woods in White Township.

Not only for the summer, but for the long run.

“The good news is that in White’s Woods ... the density (of ticks) is high and the percent of ticks that are infected is high and probably not going to get higher. I think it is as bad as it’s going to get,” said Dr. Tom Simmons. “It’s typical of areas with high levels of Lyme disease and lots of ticks.”

Simmons, a professor of biology for 31 years at IUP, said his findings are based on lab tests of ticks that he collected in recent years at White’s Woods as well as Blue Spruce County Park and Yellow Creek State Park.

He discussed the figures with a sense of urgency because, he said, the June and July period is the peak time for activity of nymphs (young black-legged ticks — also known as deer ticks). And according to the U.S. Centers for Disease Control and Prevention, most humans are infected with Lyme disease through the bites of the tiny — less than 2 mm in size — nymphal ticks.

The message from his statistics is that while hikers and nature enthusiasts can go on enjoying White’s Woods as they always have, they should more seriously heed the warnings about the spread of Lyme disease and take conscientious steps to avoid being bitten by ticks.

THE NUMBERS

Simmons’ figures show rising numbers of ticks from late 2020 to mid-2021 and increasing percentages of them capable of transmitting Lyme disease. In his field work a year ago, Simmons found 155 nymphal ticks in the Old Grove area of White’s Woods; 36 percent tested positive for Lyme disease and 9 percent carried the anaplasmosis pathogen. None were found carrying babesiosis.

“For Lyme disease, acarological/entomological risk is often defined as density of infected nymphs,” Simmons wrote. “Overall, during the months of May, June, and July the density of nymphs in Whites Woods was 8.8 /100m² and the density of infected nymphs in Whites Woods was 3.1/100m².”

Studies in the other parks yielded similar rates of infestation, Simmons reported.

“It seems that as ticks become established in an area, their density increases to the number we now see in White’s Woods,” Simmons explained. “And it also seems that the percent that are infected with Lyme disease bacterium, or pathogens or agents, seems to rise and then plateau.

“It just seems that the numbers increase and the percent of ticks infected increases and then it just hits some point and stays at that level. And we’re at that level.”

Simmons’ study of White’s Woods and Blue Spruce and Yellow Creek parks was sanctioned by the Pennsylvania Department of Environmental Protection’s statewide tick-borne disease surveillance program.

WHAT IT MEANS FOR HIKERS

It should be understood that ticks aren't lying in wait to latch onto any person making their way along White's Woods trails. They prefer dwelling on leaf litter or other material close to the ground and they prefer a cool, moist environment. That means ticks aren't commonly sitting out in the open on the dry, worn walkways that could be exposed to sunlight. Instead, they're found more often among the "understory" plant cover, not high up on the stems or leaves, but down below in shaded areas.

Simmons' figure of 10 ticks per 100 square meters means that the hiker who strays off the beaten path into the vegetation and walks about an 18-inch wide swath for the length of about two football fields could possibly collect 10 ticks on his or her boots.

By taking the proper precautions, Simmons said, hikers can avoid getting infected by any of the roughly three or four of those ticks that could be Lyme disease carriers:

- Wear tube socks.
- Wear light colored pants.
- Tuck pant legs into the tube socks.
- Wear a light colored shirt.
- Tuck the shirt into the pants.

"And stay on the trails!" Simmons implored. "The only way I would get off the trail right now in White's Woods would be if I was purposely trying to find and collect ticks."

Ticks don't just leap from plants or fly and land on human hosts. Nymphal ticks cling to footwear and climb up in search of open skin, Simmons said.

Woods walkers can prepare ahead of time, according to Simmons.

- Apply the chemical permethrin ("Nix" is a popular brand) to shoes and socks.
- Find a company that can immerse clothing in permethrin. Simmons said ticks die almost instantly when they crawl onto chemically treated clothing.
- Spray your body with insect repellent such as OFF! or DEET.

After leaving the woods, he said, there are more steps that can prevent the spread of sickness:

- Tumble all just-worn clothing in a clothes dryer on the hottest setting for 15 minutes to kill ticks.
- Take a shower and make a complete inspection for ticks.

“That’s a whole bunch of things to do, but I do it,” Simmons said. “I don’t mess around. Especially in June and July, that’s what people should routinely do.”

If a hiker finds ticks on their clothing or their body after returning home, the risk of getting infected is still small and somewhat within the hiker’s control. Simmons said a tick that has bitten someone is unlikely to transmit Lyme disease if it’s removed in less than 36 hours. Those who pull ticks from their skin or clothing also may send them by mail to a testing center at East Stroudsburg University to learn whether the insects carry Lyme bacteria or agents.

The testing is done at no charge to users. The program is funded by a state grant.

Details are available online at <https://www.ticklab.org/>.

Someone whose sample tick tests positive for Lyme disease, Simmons said, would be directed to consult their primary care physician for recommended treatment.

WHAT IS LYME DISEASE?

Symptoms of Lyme disease include fever, rash, facial paralysis and arthritis. Within the first month of infection, people experience chills, headaches, fatigue, muscle and joint aches and sometimes swollen lymph nodes. Between 70 percent and 80 percent of infected people break out in a rash that spreads up to 12 inches in diameter from the bite. On average, it appears seven days after a person is bitten but generally shows up 3 to 30 days from the time of infection, according to the CDC.

After months of infection, patients experience severe headaches and neck stiffness, facial palsy, arthritis with severe joint pain and swelling, heart palpitations, dizziness, shortness of breath, inflammation of the brain and spinal cord, and shooting pains, numbness or tingling in the hands and feet.

Early treatment with antibiotics, at the direction of an infectious disease specialist, can bring about rapid recovery without experiencing late-stage symptoms, the CDC reports.

WHAT THE FUTURE HOLDS

Simmons said he has been following pharmaceutical companies’ efforts to find drugs that can prevent Lyme disease, and predicted that a vaccination against the infection could be ready for use as early as two years from now.

“It’s pretty far along now. Pfizer is funding it. ... And I’ll get it, because I’m out in the woods.

“But we don’t have it yet, so for now it’s all about being careful and getting that tick off of you within a day and a half,” Simmons said. “Until we get a vaccine, it’s about education and getting people to change their behavior.”

And for those who would rather play against better odds of eluding ticks, a walk in White's Woods — or even doing gardening or other work in the back yards of homes adjacent to the forest — would be much safer by late summer.

“They sort of disappear by September. June and July is the peak, but May and August are less (risky),” Simmons said.

And while the insects go nearly dormant during the winter, Simmons said, ticks can become active during a warm spell of 40-degree weather with no snow cover.