Tick-borne illness still rare despite greater population

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t's been a busy summer for ticks, with three invasive species thriving in Connecticut. And while it's mathematically sound to conclude more ticks means more risk for tick-borne illness, the path to pathogen transmission

may not be as defined as generally perceived.

Dr. Henry Feder Jr., professor of family medicine in the UConn School of Medicine, who has been studying tick-borne illnesses for decades, offers the reminder that a lot needs to happen for a tick to cause a health problem worthy of serious worry.

"Lots of ticks carry disease, but positive cases in humans (per tick bite) end up being statistically rare," Feder says. "I liken it to a mosquito bite. It's not without risk, but the risk is very low. And in general, the illnesses, when they do occur, are very treatable."

Every year the Connecticut Agricultural Experiment Station is actively trapping and testing ticks for pathogens. While the information this yields can be very interesting from an epidemiological perspective—that is, helping paint a broad picture of general tick activity and trends, providing a sense of what illnesses they carry and where—it is usually of little clinical value to an individual person with a tick bite, and can end up causing confusion or undue worry.

"The deer tick, for example, can carry Lyme disease, anaplasia, or babesia," Feder says. "A prophylactic double dose of doxycycline within 72 hours of finding an engorged deer tick is effective for preventing Lyme disease. Doxycycline prophylaxis is preferred to waiting until the tick is tested, because by the time you get the results of the tick testing, you're usually outside of the 72-hour window."

Anaplasmosis and babesiosis are much less common than Lyme disease, and prophylaxis for these infections has not been studied, Feder says. "About 30% to 40% of the deer ticks tested in Connecticut are positive for a pathogen; however, the rate of clinical infection from a tick bite is usually in the low single digits, maybe 1% to 3% in a given season. For example, in a tick bite prophylaxis study done in Connecticut, about 200

subjects received placebo and two in 200 developed Lyme disease. Those two subjects were successfully treated with doxycycline."

More importantly, Feder says, is that even if the tick ends up testing positive, it's not a direct line to human infection. Going back to the Lyme example, in order to have any significant chance to pass Lyme disease to a human, first it has to be carrying Lyme disease, and even it is, it would have to feed for at least 36 hours.

"It's actually better to find the tick while it's on you than it is the find the tick bite later, because that mean's it's not done feeding," Feder says. "If it's not engorged, it can't pass it."

The state scientists have reported higher than normal tick activity this summer, which means they're trapping and testing more ticks.

"We have more ticks, therefore more illness, but in almost all cases, we're talking about very treatable illnesses," Feder says.

Ticks are most active feeders in the spring and early summer. Using an insect repellent consisting of 20 to 30 percent of the active ingredient DEET remains the most reliable way to avoid tick bites. One application repels ticks and other pests for hours.

Beyond Lyme Disease

The dog tick can carry Rocky Mountain spotted fever, which is very, very rare in Connecticut and treatable with doxycycline. The dog tick is easily found as it is easily seen, versus the deer tick, which about the size of a poppy seed.

Babesiosis is also rare, mostly because healthy immune systems usually defeat it before it causes clinical disease. Those at risk for clinical

babesia infections include people who are without a spleen, those who immunocompromised, pregnant, or those who are very old.

The lone star tick, which historically makes up less than 1% of Connecticut's tick population but this summer represents 4% of the ticks collected, can carry ehrlichiosis, which also is characterized by rash and flu-like symptoms.

A relative newcomer is the Asian long-horned tick, which has not been shown to spread illness in Connecticut, although it has in Asia.

Provided by University of Connecticut