Ticks Prefer Humans Over Dogs When It's Hot Out

As a result, people may be at greater risk for Rocky Mountain spotted fever and other diseases.

November 25, 2020 By Alicia Green

Ticks usually prefer to feed on dogs. But new findings presented at the Annual Meeting of the American Society of Tropical Medicine and Hygiene reveal that a variety of these disease-carrying parasites are more likely to choose humans as their host during hotter weather, thus putting people at risk of acquiring Rocky Mountain spotted fever (RMSF), reports the University of California, Davis.

Over the last 20 years, cases of RMSF and similar diseases have significantly increased in the United States. Symptoms of RMSF include headache, fever and muscle aches, which are easily mistaken for signs of other conditions.

If not immediately treated with antibiotics, RMSF can cause health problems, such as damaged blood vessels, kidney failure and inflammation of the heart, lungs and brain. Also, the death rate for RMSF can surpass 20%.

Researchers conducted a series of tests that involved putting a human in one large wooden box and a dog in another. Ticks were placed in a clear plastic tube connecting the boxes. Over a period of 20 minutes, scientists observed whether ticks (using their sense of smell) preferred dogs or humans at temperatures of around 74° Fahrenheit and then 100° Fahrenheit.

As the temperature rose, one type of brown dog tick—known as the tropical lineage tick that's found in hotter states like Arizona and Florida—purposefully shifted its preferences from dogs to human.

Brown dog ticks from the temperate lineage, which are found in 48 states and may also carry RMSF, were just slightly more likely to pick humans over dogs when temperatures rose. However, a number of these ticks switched from definitively choosing dogs to just neutral, meaning they didn't choose either dogs or humans.

Researchers hypothesized that as temperatures increase due to climate change, tropical lineage ticks may spread northward.

“The findings from the use of this simple but effective laboratory experiment to gauge how rising temperatures might lead to more human infections with a very dangerous tick-borne pathogen adds to the growing evidence of the increasing connection between climate change and its impact on health,” said Joel Breman, MD, DTPH, FASTM, president of American Society of Tropical Medicine and Hygiene.

He added that scientists must keep up with climate change and how the phenomenon can alter and intensify infectious diseases to be better prepared to diagnose, treat and prevent these conditions.

For related coverage, read “This Tick-borne Virus Can Be Transmitted Within Minutes.”

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