

Lyme disease cases among children are on the rise in western Pennsylvania

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Lyme disease cases among children are on the rise in western Pennsylvania, according to researchers from Children's Hospital of Pittsburgh of UPMC. The findings are published online today in *Clinical Infectious Diseases*.

Lyme disease is the most common vector-borne infection in the United States and the geographic expansion of Lyme disease has been identified by state and local health departments and Centers for Disease Control and Prevention studies, but until now, western Pennsylvania was not considered a Lyme endemic area.

"This study details the shift of western Pennsylvania from a Lyme-naïve to a Lyme endemic area, highlighting the change in symptoms seen clinically and the types of doctors caring for these patients," said Brian Campfield, M.D., pediatric [infectious diseases](#) specialist, Division of Infectious Diseases, Children's Hospital. "Our experience may serve as a model for other areas of the United States that are at risk for a Lyme epidemic."

Lyme disease, caused by the bacteria, *Borrelia burgdorferi*, is transmitted through the bite of a tick commonly known as the deer tick or black-legged tick. The infection can be treated with an antibiotic, but if it is not treated it can lead to many problems, including muscle and joint aches, facial paralysis, arthritis and brain inflammation.

The researchers found that cases of pediatric Lyme disease increased exponentially over a 10-year period from 2003 to 2013 in western Pennsylvania, with the highest burden of infection shifting from rural to non-rural areas. Additionally, [children](#) from different areas seek health care for Lyme disease in different locations at different stages of infection: Children from cities and suburbs were more likely to first be seen in a hospital emergency department with symptoms of early Lyme disease, such as a rash; whereas

children from rural areas were more likely to first be seen by their primary care provider with symptoms of late Lyme disease, such as arthritis.

From 2003 through 2005, in total, there were five cases of Lyme disease confirmed in children in western Pennsylvania. In 2013, the last year with complete data in the study, there were 285 children diagnosed with Lyme disease.

"Western Pennsylvania is now endemic for Lyme disease and we can expect that this burden of pediatric Lyme disease will persist for the foreseeable future," said Andrew Nowalk, M.D., Ph.D., pediatric infectious diseases specialist, Division of Infectious Diseases, Children's Hospital. "Being a geographically distinct area that is west of the Appalachians and south of the Great Lakes, it is concerning that few natural geographic barriers exist to limit the spread of the tick or the infection that causes Lyme disease. It is very possible that other areas throughout the Midwest, Ohio River Valley and Southeast will experience a similar change in Lyme [disease](#) burden. Perhaps, our clinical experience can inform public health initiatives and health care utilization needs."

Provided by University of Pittsburgh Schools of the Health Sciences

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