

Study shows most children recover from Lyme disease within six months of treatment

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This engorged tick, collected in Annapolis, Maryland is likely a female adult deer tick, or *Ixodes scapularis*. Deer ticks are also called blacklegged ticks and can transmit the pathogens that cause tickborne diseases such as babesiosis and Lyme disease. Credit: NIAID

A majority of parents of children diagnosed with Lyme disease reported that their kids recovered within six months of completing antibiotic treatment, according to a new joint study from Children's National Research Institute and the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, published in *Pediatric Research*.

The findings, based on Lyme disease treatment outcome data from 102 children in the United States, also revealed that a notably small percentage of children took longer than six months to recover and experienced a significant impact on their daily functioning.

Lyme disease is the most common vector-borne disease in the United States, with most cases caused by the bacterium *Borrelia burgdorferi* transmitted through the bites of infected blacklegged or deer ticks. Children between the ages 5 and 9 years account for a large proportion of the approximately 476,000 Lyme disease cases diagnosed and treated annually in the United States. Common symptoms of Lyme disease include: fever; headache; fatigue; and a distinct skin rash called erythema migrans.

Without treatment, the infection can spread to joints, the heart and the nervous system. Antibiotic treatment resulting in full recovery is successful in most Lyme cases. For some, however, symptoms of pain, fatigue, or difficulty thinking persist or return after [antibiotic treatment](#). Symptoms that substantially reduce levels of activity and impact quality

of life for more than six months after treatment are classified as post-treatment Lyme disease (PTLD) syndrome.

This research studied the long-term outcomes of children with Lyme disease through a cross-sectional evaluation using validated surveys. The study collected survey responses from the parents of 102 children ages 5 to 18 years who had been diagnosed with Lyme disease between six months and 10 years before enrollment. Adolescents ages 10 to 18 years old were also invited to complete adolescent-specific questionnaires.

According to these parent survey responses, 75% of children fully recovered within six months of completing treatment: 31% of all children recovered within one month; 30% recovered in one-to-three months; and 14% recovered in four-to-six months. Approximately 22% of children in the study experienced at least one symptom that persisted six or more months after completing treatment; of those, 9% had symptoms classified as PTLD syndrome.

Six percent of the children were not fully recovered at the time of the survey, with 1% experiencing symptoms significant enough to impair daily functioning, the authors noted.

According to the authors, this study supports previous data showing an excellent overall prognosis for children with Lyme disease, which should help alleviate understandable parental stress associated with lingering non-specific symptoms among infected children. They note that the findings of this study can help clinicians manage families' expectations about the varying post-treatment recovery times of pediatric Lyme disease patients.

The researchers suggest this new data could help reduce the potential for families seeking dangerous alternative therapies for children who experience prolonged recovery times. PTLD syndrome remains poorly

understood in children and adults, and more research is needed to better understand these prolonged symptoms and identify treatment targets, according to the authors.

More information: Maureen Monaghan et al, Pediatric Lyme disease: systematic assessment of post-treatment symptoms and quality of life, *Pediatric Research* (2023). [DOI: 10.1038/s41390-023-02577-3](https://doi.org/10.1038/s41390-023-02577-3)

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