

## Can Lyme disease trigger obsessive compulsive symptoms?

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<https://danielcameronmd.com/can-lyme-disease-trigger-obsessive-compulsive-symptoms/>

The [article published in \*General Hospital Psychiatry\*](#) examines the temporal incidence of obsessive compulsive symptoms (OCS) among 147 subjects, ages 18 – 82, with Lyme disease. The study found that 84% of these individuals reported having “clinically significant” OCS. However, only 44% identified themselves as experiencing OCS. Their obsessions and compulsions included washing, checking, ordering, obsessing, hoarding, and neutralizing.

The onset of obsessive compulsive symptoms appeared to correlate with the individuals’ Lyme disease diagnosis. Twenty-six percent of the participants indicated the onset of obsessive compulsive symptoms occurred after their Lyme disease diagnosis, while 51% were unclear when they were diagnosed with Lyme disease but believed that their OCS was temporally related to LD.

More than 90% of the individuals reported a gradual onset (i.e., several months) of obsessive compulsive symptoms. “There was no age difference between those with sudden-onset symptoms and those with a gradual onset,” according to Johnco, lead author of the study.

The majority of participants (60%) reported a waxing and waning course of symptoms, while 40% reported a chronic and steady course of OCS. Out of the participants who were aware of their OCS, nearly 50% had taken psychotropic medications with 77% experiencing “at least partial improvement in OCS.”

“Most patients who sought mental health treatment for OCS experienced improvement of symptoms, and around half also reported improvement in OCS following antibiotic treatment,” the authors state.

The authors also found “those who experienced psychiatric and neurological symptoms associated with LD [Lyme disease] reported greater OCS severity.” Similarly, participants with a greater number of Lyme disease symptoms reported higher levels of OCS.

The authors offer two explanations for their findings. The OCS may be due to the “direct physiological effects of Lyme disease or associated immunologic response, a psychological response to illness, a functional somatic syndrome, or some combination of these.” More specifically, they write:

1. “LD may play a direct or indirect role in the pathogenesis of OCS, possibly via inflammation and impact on the central nervous system via decrease in the integrity of the blood brain barrier, along with an increase in inflammatory cytokines, production of antineuronal antibodies or glutamatergic excitotoxicity.”
2. “OCS are a functional somatic response to a diagnosis of LD for some individuals. Those with greater levels of disease severity and disease-related impairment may engage in certain OCS in an attempt to manage their LD symptoms or the co-occurring emotional distress, and OCS may provide some temporary sense of control and emotional relief.”

“LD has been identified as a potential trigger for OCS and tic symptoms in children with Pediatric Acute-onset Neuropsychiatric Syndrome (PANS), with remission of symptoms following antibiotic treatment,” writes Johnco.

However, this study was limited to adults and not designed to address the question as to whether Lyme disease could be a potential infectious trigger of [PANS, which is characterized, in part, by a sudden onset of obsessive compulsive behaviors and/or tics](#).

The authors do point out that the lack of “sudden-onset OCS” and the greater response to psychotropic medications rather than antibiotics “cast some level of doubt on the similarity to PANS presentations in the majority of respondents.”

Several limitations in the study design are highlighted including recruitment of participants from internet forums and reliance on self-reported symptoms and other medical data. But the authors emphasize the need for more studies.

“Attention to psychiatric symptoms in patients with LD has been minimal, and there is considerable scope to extend this research area in coming years,” writes Johnco.

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[16-year-old boy with Lyme disease presenting as depression](#)

[7-year-old girl with Lyme disease presenting as attention deficit disorder](#)

#### **References:**

1. Johnco C, Kugler BB, Murphy TK, Storch EA. Obsessive-compulsive symptoms in adults with Lyme disease. *Gen Hosp Psychiatry*. 2018;51:85-89.

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