

## Poor sleep quality in Lyme disease patients

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[The authors describe the quality of the sleep of Lyme disease \(LD\) patients](#) who were “ideally treated” for an erythema migrans rash. They defined “ideally treated” as a 3-week course of doxycycline. Their study excluded individuals with more complicated presentations including self-reported history of prior LD, having Lyme symptoms for greater than 3 months duration, autoimmune disorders, clinical depression, bipolar disorder, chronic fatigue syndrome, fibromyalgia, and other chronic pain disorders.

Prior to starting treatment, sleep disturbances were common for early Lyme disease patients. “41% of participants with early LD reported new-onset difficulty sleeping that they associated with the LD illness process,” writes Weinstein. There was a trend for Lyme disease patients having trouble sleeping specifically due to pain. The higher daytime dysfunctional scores was difficult to separate out from sleep problems in the general U.S. population. “By 6 months post-treatment, participant sleep scores as a group returned to control levels,” Weinstein writes.

However, poor quality of sleep did not resolve for 6 participants with PTLDS. These patients remained ill for one year after treatment with moderate to severe fatigue, musculoskeletal pain, or cognitive difficulties, and poor function with daily life activities, as defined by a 36-item Short Form Health Survey (SF-36).

Post-Treatment Lyme Disease Syndrome patients report sleep disturbances.

Their sleep disruption was severe. “PTLDS participants reported significantly worse global sleep and sleep disturbance scores and worse fatigue, functional impact, and more cognitive-affective depressive symptoms compared to poor-sleeping controls,” writes Weinstein.

The 6 PTLDS patients were significantly sicker than controls in many areas:

- “Four out of six cases had moderate to severe trouble sleeping that they attributed specifically to pain.”
- “Five of six PTLDS cases indicated having some trouble sleeping due to bad dreams.”
- PTLDS patients had significantly higher levels of fatigue, greater cognitive-affective depressive symptoms and greater functional impact resulting from their symptoms.

Meanwhile, 2 of the 6 PTLDS patients reported depressive symptoms and 5 of the 6 PTLDS patients met the criteria for clinically significant symptoms of depression. The depression may be due to “emotional distress they are experiencing secondary to the overall illness,” the authors’ explain. But these findings suggest that it is important to screen “for depressive symptoms in individuals with LD who report persistent symptoms of any type over the first year after exposure,” writes Weinstein.

The authors did not discuss their use of the term Post-Treatment Lyme Disease Syndrome. The “Post-Lyme” term gives the impression that there is no persistent infection. However, there are no tests to determine whether a tick-borne infection has cleared. The authors did not discuss the possibility of a persistent infection after their single 3-week course of antibiotics. A persistent infection or co-infection with a tick-borne illness was a consideration in their previous paper. [2]

**References:**

1. Weinstein ER, Rebman AW, Aucott JN, Johnson-Greene D, Bechtold KT. Sleep Quality in Well-defined Lyme Disease: A Clinical Cohort Study in Maryland. *Sleep*. 2018.
2. Bechtold KT, Rebman AW, Crowder LA, Johnson-Greene D, Aucott JN. Standardized Symptom Measurement of Individuals with Early Lyme Disease Over Time. *Arch Clin Neuropsychol*. 2017;32(2):129-141.

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