

## Cochrane review failed to identify a single USA trial on the neurologic complications of Lyme disease

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<http://danielcameronmd.com/cochrane-review-fails-publish-single-usa-trial-neurologic-complications-lyme-disease/>

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In a review, published in Cochrane, entitled [Antibiotics for the neurological complications of Lyme disease](#), Cadavid and colleagues identify several trials investigating the effectiveness of antibiotic treatments for neurological Lyme disease in Europe. The authors describe generally favorable outcomes for treating neurologic complications of Lyme disease. “The majority of people are reported to have good outcomes, and symptoms resolve by 12 months regardless of the antibiotic used. A minority of participants did not improve sufficiently, and some were retreated. These randomized studies provide some evidence that doxycycline, penicillin G, ceftriaxone, and cefotaxime are efficacious in the treatment of European LNB.” [1]

Unfortunately, not a single trial involving antibiotic treatment for chronic manifestations of Lyme disease in the USA is included in the Cochrane library, despite well-documented studies demonstrating neurologic complications.

As early as 1990, a case series described chronic neurologic complications of Lyme disease (LD) present up to 14 years after the onset of symptoms. [2] Lyme encephalopathy was described in 1990 in a case series of patients with an abnormal spinal tap. [3] Most recently, one of the four National Institutes of Medicine (NIH)-sponsored trials was limited to Lyme encephalopathy patients. [4]

Antibiotic treatment has been effective for some but not all Lyme disease patients with neurologic manifestations. In the chronic neurologic LD case series, 63% of patients treated with 2 weeks of intravenous ceftriaxone improved, 22% improved but then relapsed, and 15% failed to improve. [2] In the series of Lyme encephalopathy cases, 26% of patients treated with 4 weeks of intravenous ceftriaxone returned to normal, 32% greatly improved, 16% somewhat improved (5% requiring retreatment) and 16% dropped out. [3] In the NIH-sponsored trial, patients treated with 10 weeks of intravenous ceftriaxone saw significant improvement in their fatigue but not in their primary outcome of cognitive function. [4]

Doctors may find it surprising that the *Cochrane review* fails to identify a single trial on the antibiotic treatment of neurologic complications from LD in the USA, including the two case series and the NIH-sponsored trial. “We excluded non-randomized and uncontrolled studies. We also excluded single-case reports and case series,” explains Cadavid. [1]

Clinicians will need to rely on research data not included in the *Cochrane review* when making treatment decisions for their patients with neurologic complications of Lyme disease.

References:

1. Cadavid, D., et al., Antibiotics for the neurological complications of Lyme disease. *Cochrane Database Syst Rev*, 2016. 12: p. CD006978.
2. Logigian, E.L., R.F. Kaplan, and A.C. Steere, Chronic neurologic manifestations of Lyme disease. *N Engl J Med*, 1990. 323(21): p. 1438-44.
3. Logigian, E.L., R.F. Kaplan, and A.C. Steere, Successful treatment of Lyme encephalopathy with intravenous ceftriaxone. *J Infect Dis*, 1999. 180(2): p. 377-83.
4. Fallon, B.A., et al., A randomized, placebo-controlled trial of repeated IV antibiotic therapy for Lyme encephalopathy. *Neurology*, 2008. 70(13): p. 992-1003.

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