Peer-Reviewed Evidence of Persistence of Lyme Disease Spirochete

*Borrelia burgdorferi* and Tick-Borne Diseases

The following is a list of over 700 peer-reviewed articles that support the evidence of persistence of Lyme and other tick-borne diseases. It is organized into different categories—general, neuropsychiatric, dementia and congenital transmission.

**General: Persistence of Lyme Disease Spirochete *Borrelia burgdorferi***

13. Bankhead T, Chaconas G. The role of VlsE antigenic variation in the Lyme disease spirochete: persistence through a mechanism that differs from other pathogens. Molecular Microbiology 2007; 65: 1547-1558.
dogs, nonhuman primates, and humans]


20. Bayer ME, Zhang L, Bayer MH. Borrelia burgdorferi DNA in the urine of treated patients with chronic Lyme disease symptoms. A PCR study of 97 cases. Infection 1996; 24: 347-353. [97 patients who had been treated with antibiotics for extended periods of time and had symptoms of chronic Lyme were PCR-positive.]


261-262.
82. Dvorakova J, and Celer V. Pharmacological aspects of Lyme borreliosis. Seska Slov Farm. 2004(Jul); 53(4): 159-164.
94. Franz JK, O Fritze, M Rittig et al. Insights from a novel three-dimensional in vitro model
108. Hamlen R. Tick-borne infections--a growing public health threat to school-age children. Prevention steps that school personnel can take. NASN School Nurse 2012(Mar); 27(2): 94-100.
111. Harvey WT, Bransfield RC, Mercer DE, Wright AJ, Ricchi RM, Leitao MM.


129. Johnson RC, Marek N, Kodner C. Infection of Syrian hamsters with Lyme


187. Moody KD, Adams RL, and Barthold SW. Effectiveness of antimicrobial treatment against Borrelia burgdorferi infection in mice. Anticarb Agents Chemother


199. Oksi J, Marjamäki M, Nikoskelainen J, Viljanen MK. Borrelia burgdorferi detected by culture and PCR in clinical relapse of disseminated Lyme borreliosis. Ann Med 1999; 31(3): 225-232. [40% of patients had clinical relapses that were PCR or culture-confirmed.]


204. Pachner AR, Basta J, Delaney E, and Hulinska D. Localization of Borrelia


210. Pfister HW, Preac Mursic V, Wilske B, Schielke E, Sorgel F, Einhaupl KMJ. Randomized comparison of ceftriaxone and cefotaxime in Lyme neuroborreliosis. Infect Dis 1991; 163(2): 311-318. [In one patient, Bb as isolated from the cerebrospinal fluid 7.5 months after ceftriaxone therapy and, thus, showing that extended therapy is necessary.]


220. Preac Mursic V, Marget W, Busch U, Rigler DP, Hagl S. Kill kinetics of Borrelia burgdorferi and bacterial findings in relation to the treatment of Lyme borreliosis. Infection 1996; 24(1): 9-16. [Bb was isolated by culture in five patients, four of whom had previously tested antibody-negative.]

221. Priem S, Burmester GR, Kamradt T, Wolbart K, Rittig MG, et al. Detection of


Sapi E, Pabbati N, Datar A, Davies EM, Rattelle A and Kuo BA. Improved


262. Straubinger RK. PCR-based quantification of Borrelia burgdorferi organisms in canine tissues over a 500-day postinfection period. J Clin Microbiol 2000; 38: 2191-2199. [All 8 infected dogs previously treated with 30-day antibiotics were PCR positive from tissue samples after necropsy].


292. Yang L, Weis JJ, Eichwald E, Kolbert CP, Persing DH, Weis JJ. Heritable susceptibility to severe Borrelia burgdorferi-induced arthritis is dominant and is


296. Yrjänäinen H, Hytönen J, Hartiala P, Oksi J, Viljanen MK. Persistence of borrelial DNA in the joints of Borrelia burgdorferi-infected mice after ceftriaxone treatment. APIMIS 2010;118(9): 665-673. [Borrelia burgdorferi DNA in joints and tissue adjacent to the joint is the niche of persisting B. burgdorferi in ceftriaxone-treated mice.]


Neuropsychiatric Symptoms and Lyme/Tick-Borne Diseases

1. Aalto A, Sjowall J, Davidsson L, Forsberg P, Smedby O. Brain magnetic resonance imaging does not contribute to the diagnosis of chronic neuroborreliosis. Acta Radiol 2007; 48: 755-762. [white matter hyperintensities or basal ganglia lesions].


29. Borgermans L, Goderis G, Vandevoorde J, Devroey D. Relevance of chronic Lyme


100. Fritzsche M. Seasonal correlation of sporadic schizophrenia to Ixodes ticks and Lyme borreliosis. Int J Health Geogr. 2002; 1:2


127. Harvey WT, Martz D. Motor neuron disease recovery associated with IV


164. Krause DL, Norbert Müller N. The relationship between Tourette’s syndrome


179. Logigian EL, Johnson KA, Kijewski MF, Kaplan RF, Becker JA, Jones KJ, Garada BM, Holman BL, Steere AC. Reversible cerebral hypoperfusion in Lyme
1995; 98(4A):30S-37S


278. Stricker RB, Green CL, Savely VR, Chamallas SN, Johnson L. Safety of


Tick-Borne Diseases and Dementia


31. MacDonald AB. Borrelia in the brains of patients dying with dementia. JAMA. 1986;256:2195-2196.
35. Meer-Scherrer L, Chang Loa C, Adelson ME, Mordechai E, Lobrinus JA, Fallon BA,

41. Miklossy J. Chronic or late Lyme neuroborreliosis: analysis of evidence compared to chronic or late neurosyphilis. Open Neurol J 2012;6: 146-157.
discussion 673-681.
55. Miklossy J. (2012) Chronic or late lyme neuroborreliosis: analysis of evidence compared to chronic or late neurosyphilis. Open Neurol J 6, 146-57.

Congenital/Sexual Transmission of Lyme/TBD

1. Alekseev AN, Dubinina HV. Exchange of Borrelia burgdorferi between Ixodes


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