

Chronic Lyme Disease and Co-infecting Tick Borne Diseases

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A multi-pathogenic event can occur when a person is bitten by a tick. Tick bite related infection could lead to a persistent or chronic infection.

One needs to understand that we still do not have the technology to enable us to know with 100% certainty that a person who has been treated with a prescribed course of antibiotic therapy during a defined period of time is totally free of Lyme and other tick related infections.

We also must first rule out the presence of other tick related infections as potential causative agents of tick related illnesses before we can start to address the issue of chronic infection.

An infection can persist if the organisms are able to hide from the antimicrobial effects of antibiotic therapies (this is the case of the Lyme organisms *Borrelia burgdorferi*) inside of a variety of cells and also in these intracellular locations, undergo changes in their spirochetal morphology to become “*intracellular forms*”. In addition, these organisms can form protective structures called “*cysts*” and “*biofilms*”. When antibiotic therapy is withdrawn, these organisms will come out of their protective locations, and can again re-start an infective process.

As a lab trained Microbiologist and Clinical Assistant Professor of Neurology focusing upon infections of the brain and nervous system, I find it very difficult to understand how strong statements about the existence or absence of chronic infections can be made when the current immunology based system that we utilize does not provide an answer to this question.