

TREATMENT OF NERVOUS SYSTEM LYME DISEASE

Lyme disease is caused by bacteria that are carried and spread by ticks. When a person is bitten by a tick and becomes infected many different symptoms can appear. Some of these symptoms affect the nervous system (made up of the brain, spinal cord, and nerves). This AAN guideline shows that there are very effective treatments for this infection.

Neurologists from the American Academy of Neurology are doctors who treat diseases of the nervous system. They believe that people with nervous system Lyme disease should know what treatments may help them. The doctors who reviewed all of the available studies on nervous system Lyme disease wrote the guideline to offer suggestions that will help other doctors and people with this disorder make choices in care and treatment.

Symptoms of Nervous System Lyme Disease

If you or a family member have been told by a doctor that you have nervous system Lyme disease, regardless of age, your symptoms may include headache, facial nerve palsy (Bell's palsy), and *meningitis* (swelling and pain in the membrane surrounding the brain). Rarely the brain or spinal cord may become inflamed, causing weakness or changes to the nerve impulses in parts of the body, or other symptoms.

Patients with nervous system Lyme disease may also have one or more of these symptoms: *radicular* (sciatica-like nerve) pain, weakness or numbness due to nerve damage, or changes in cognitive function (thinking, reasoning, remembering, imagining).

Treatments for Patients with Nervous System Lyme Disease

There are several options for treatment from which your doctor may choose. Talk with him or her to discuss the treatment option that will work best for you.

For nervous system Lyme disease **with or without brain or spinal cord involvement**, there is **good** evidence* that *parenteral* (not taken by mouth) ceftriaxone, cefotaxime, and penicillin are probably safe and effective (a phrase meaning there is a reasonable amount of evidence supporting this conclusion).

For nervous system Lyme disease **without brain or spinal cord involvement**, there is **good** evidence* that oral doxycycline is probably safe and effective (but this medication should generally not be used in children under the age of 8, or in pregnant women).

All of these drugs are antibiotics.

Note: Although the evidence is stronger in adults than children, all available studies show that the results of oral antibiotic treatment are about the same in both adults and children.

Treatment of Post-Lyme Syndrome

Some people continue to have symptoms following treatment for Lyme disease. Only very rarely is this due to continued infection with the Lyme bacteria. Studies show that long-term antibiotic use does not help these symptoms.

There is **strong** evidence* which shows prolonged (more than four weeks) treatment with antibiotics does not improve symptoms of this "post-Lyme syndrome." Prolonged *parenteral* (not taken by mouth) antibiotic use can lead to severe diarrhea, blood stream infections, blood clots, and other serious side effects; therefore, it is not recommended for longer than four weeks.

* After the experts review all of the published research studies, they describe the strength of the evidence supporting each recommendation: *Strong evidence* = More than one high-quality scientific study. *Good evidence* = At least one high-quality scientific study or two or more studies of a lesser quality. *Weak evidence* = The studies, while favorable, are weak in design or strength of the evidence. *Not enough evidence* = Either different studies have come to conflicting results or there are no studies of reasonable quality.

This is an evidence-based educational service of the American Academy of Neurology. It is designed to provide members and patients with evidence-based guideline recommendations to assist with decision-making in patient care. It is based on an assessment of current scientific and clinical information, and is not intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physician caring for the patient based on the circumstances involved.



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