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# 01

## Introduction



### **The beginnings of Lyme disease**

In 1909 a Swedish dermatologist Arvid Afzelius discovered that a skin rash can be a sign of Lyme disease. Back then the disease didn't have a name. In 1982 an American scientist, Willi Burgdorfer, separated the *Borrelia burgdorferi* strain. The current name of the disease – *Borrelia* from Lyme – comes from a name of a town in USA, Lyme, where in 1977 two cases of *Borrelia* were found and described. The patients were two teenagers, both suffering from arthritis.

## Detailed information about Lyme disease

Lyme disease, also known as neuroborreliosis, has been discovered very recently, only 30 years ago. That's why there are so many issues with diagnosing it – we usually don't have any contact with it and its occurrence is not common. Lyme is a multisystem infectious disease caused by bacteria from following strands: *Borrelia burgdorferi*, *Borrelia garinii*, *Borrelia afzelii* and *Borrelia japonica*.

Getting infected by Lyme is usually caused by a bite of an Ixodes tick, a carrier of the disease. The most important thing to remember is that animals can get infected as well as humans. Apart from Lyme carried by ticks there are also other diseases referred to as coinfections. Lyme can also be a direct cause of different illnesses, such as tetany.

Not every tick is a carrier of Lyme. It is estimated, that only over a dozen percent of arachnids are infected. If there's an area where more than 20% of the arachnids carry the disease, it is considered to be a problem similar to an epidemic. Avoiding ticks is not as easy as it may seem. A lot of people make an incorrect assumption that you can get bitten only in the woods. Of course it is a place where it is very likely to get bitten, but ticks live only 1,5 meters above the ground. They hide in high grass, bushes, meadows and fields. Every year the number of ticks increases. New kinds are created and they start to be immune to repellants we use to protect ourselves.





02

10 facts about Lyme disease  
you should know



1. The number of sick patients increases every year.
2. You can have no symptoms of the disease, even for numerous years.
3. The symptoms can be found in different body parts.
4. Lyme disease can cause tick-borne encephalitis.
5. A medicine for Lyme disease hasn't been discovered yet.
6. Less than 50 % of infected people notice the characteristic rash that appears on their skin after getting bitten.
7. About 40% of patients relapse after antibiotic treatment.
8. Not only ticks carry Lyme disease – so do mosquitoes, flies, mites and fleas.
9. Covering your body with clothes and chemical sprays do not guarantee 100 % protection from ticks.
10. You can get infected not only in the woods, but also on a beach, in a tent or at home.





# 05

## Three methods of treating Lyme disease



### **1. IDSA method**

In this method patient receives antibiotics after noticing the first symptoms of the disease. If the symptoms do not appear, there's no need for medication. It is used only in situations, when the patient got bitten by a tick less than 72 hours ago, the area where it happened has at least 20% of Lyme infected ticks and there are no contraindications.