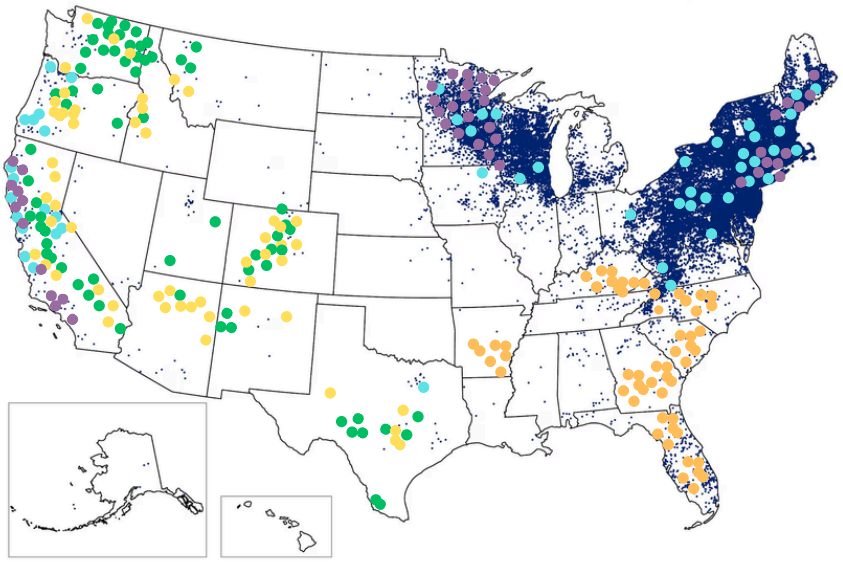
VibrantWellness

Comparing Tick-Borne Borrelia Species in North America and Europe/Asia

Understanding the Distribution and Impact of Different Strains

Lyme Disease Species	United States	Europe / Asia
Borrelia burgdorferi	*Borrelia burgdorferi* is found in the U.S.	*Borrelia burgdorferi* is found in Europe and Asia
Borrelia mayonii	North America, primarily in the **Upper Midwest** region of the US.	
Borrelia afzelii		*B. afzelii* and *B. garinii* are the primary causes of Lyme disease in Europe and Asia.
Borrelia garinii		*Borrelia garinii* has only been found in ticks in Eurasia.
Borrelia bavariensis		Found in Europe and Asia
Borrelia spielmanii		*B. spielmani* was detected in ticks feeding on garden and hazel dormice, in questing ticks, and in patients in France, Germany, The Netherlands, and the Czech Republic
Borrelia hermsii	*Borrelia hermsii* is the primary cause of tick-borne relapsing fever in **western North America**	
Borrelia turicatae	*Borrelia turicatae* is the primary cause of tick-borne relapsing fever in southwestern US. *B. turicata* can be found in caves and ground squirrel or prairie dog burrows in the **Plains regions** of the Southwest.	
Borrelia lonestari	*Borrelia lonestari* is linked to STARI (Southern Tick-Associated Rash Illness), mainly in the **southeastern** and **south-central U.S.**	
Borrelia miyamotoi disease	First identified in 1995 in ticks from Japan, *B. miyamotoi* has since been detected in two types of **North American** ticks, the blacklegged or “deer” tick (Ixodes scapularis) and the Western blacklegged tick (Ixodes pacificus).	First identified in 1995 in ticks from **Japan**, *B. miyamotoi* has since been detected in two types of North American ticks, the blacklegged or “deer” tick (Ixodes scapularis) and the Western blacklegged tick (Ixodes pacificus).
Borrelia lusitaniae	As of now, there is limited evidence of its presence in the United States.	*Borrelia lusitaniae*, a species of tick-borne bacteria, has primarily been reported in **Europe.**

Please note: While *Borrelia burgdorferi* is more common in North America, it can also be found in Europe and Asia. Similarly, *Borrelia afzelii* and *Borrelia garinii*, typically found in Europe and Asia, may occasionally be encountered in other regions due to global travel, migrating wildlife, and environmental changes.



North America Strains

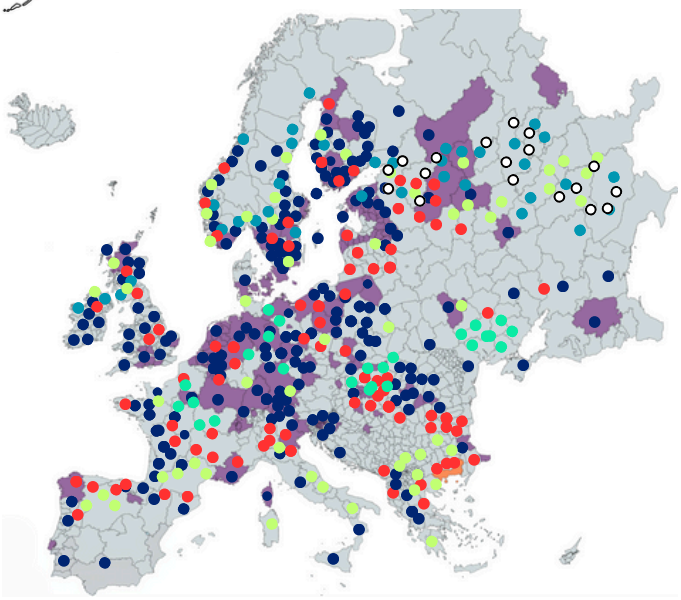
- *Borrelia burgdorferi*
- *Borrelia mayonii*
- *Borrelia hermsii (TBRF)*
- *Borrelia turicatae (TBRF)*
- *Borrelia lonestari (TBRF)*
- *Borrelia miyamotoi*

www.cdc.gov/lyme/data-research/facts-stats/lyme-disease-case-map.html

There have been no human cases of tickborne diseases from tick bites in Alaska. Lyme disease is not found in Hawaii due to the absence of the tick that transmits it.[11] [12]

Europe / Asia Strains

- *Borrelia burgdorferi*
- *Borrelia miyamotoi*
- *Borrelia afzelii*
- *Borrelia lusitaniae*
- *Borrelia garinii*
- *Borrelia bavariensis*
- *Borrelia spielmanii*
- *Borrelia turcica*



Jakab Á, Kahlig P, Kuenzli E, Neumayr A. Tick borne relapsing fever - a systematic review and analysis of the literature. PLoS Negl Trop Dis. 2022 Feb 16;16(2):e0010212. doi: 10.1371/journal.pntd.0010212.

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