

- mutations. *N Engl J Med.* 2022;386:93–4. <https://doi.org/10.1056/NEJMc2103049>
9. O'Donnell MR, Padayatchi N, Wolf A, Zelnick J, Daftary A, Orrell C, et al. Bedaquiline adherence measured by electronic dose monitoring predicts clinical outcomes in the treatment of patients with multidrug-resistant tuberculosis and HIV/AIDS. *J Acquir Immune Defic Syndr.* 2022;90:325–32. <https://doi.org/10.1097/QAI.0000000000002940>

10. Fowler P; CRYPTIC Consortium. Epidemiological cut-off values for a 96-well broth microdilution plate for high-throughput research antibiotic susceptibility testing of *M. tuberculosis*. *Eur Respir J.* 2022;60:2200239. <https://doi.org/10.1183/13993003.00239-2022>

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COMMENT LETTER

Nomenclature for Human Infections Caused by Relapsing Fever *Borrelia*

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To the Editor: Vazquez et al. report a convincing case of relapsing fever caused by *Borrelia lonestari* bacteria (1). This discovery highlights an existing problem with the nomenclature for relapsing fever.

Tick-borne relapsing fever (TBRF) is the name given to illness caused by several genospecies of relapsing fever *Borrelia* bacteria, all of which are transmitted by argasid (soft) ticks (2). The limitations of this term became apparent after discovery of *B. miyamotoi*, a related genospecies that is transmitted by ixodid (hard) ticks and causes illness that differs epidemiologically from traditional TBRF (3). Consequently, 3 terms are used in the scientific literature to describe *B. miyamotoi* infections: *Borrelia miyamotoi* disease, hard tick-borne relapsing fever, and hard tick relapsing fever (3,4). In the interest of standard nomenclature, it is worth considering objectively the relative merits of each term.

The term *Borrelia miyamotoi* disease (BMD) is problematic because it is species specific and cannot accommodate the discovery of related pathogens transmitted by ixodid ticks, including potentially *B. lonestari* (1,3). Disease names are most serviceable as

umbrella terms that exist above the species level (e.g., Lyme disease, shigellosis).

The term hard tick-borne relapsing fever has a different problem, a grammatical one. The word hard rightly modifies tick, not tick-borne, which is a mode of transmission. This problem is solved by shortening to hard tick relapsing fever. The suffix “-borne” is not essential for clarity, as demonstrated by other established names (e.g., sand fly fever, Colorado tick fever) (2).

In the absence of a formal nomenclature decision by the World Health Organization, the following terms are consistent with precedent, epidemiologically useful, linguistically sensible replacements for TBRF: hard tick relapsing fever (HTRF) for illness caused by relapsing fever-clade *Borrelia* transmitted by ixodid ticks, and its congener, soft tick relapsing fever (STRF), for related agents transmitted by argasid ticks.

References

- Vazquez Guillamet LJ, Marx GE, Benjamin W, Pappas P, Lieberman N, Bachiashvili K, et al. Relapsing fever caused by *Borrelia lonestari* after tick bite in Alabama, USA. *Emerg Infect Dis.* 2023;29:441–4. <https://doi.org/10.3201/eid2902.221281>
- World Health Organization. International Classification of Diseases, 11th revision. 2022 [cited Jan 31]. <https://icd.who.int>
- Telford SR III, Molloy PJ, Berardi VP. *Borrelia miyamotoi*. *Ann Intern Med.* 2015;163:963–4. <https://doi.org/10.7326/L15-5187>
- Rodino KG, Pritt BS. When to think about other *Borrelia*: hard tick relapsing fever (*Borrelia miyamotoi*), *Borrelia mayonii*, and beyond. *Infect Dis Clin North Am.* 2022;36:689–701. <https://doi.org/10.1016/j.idc.2022.04.002>

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Correction

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The Figure had an incorrect x-axis scale in Laboratory Features of Trichinellosis and Eosinophilia Threshold for Testing, Nunavik, Quebec, Canada, 2009–2019 (L.B. Harrison et al.). The article has been corrected online (https://wwwnc.cdc.gov/eid/article/28/12/22-1144_article).