

CADTH RAPID RESPONSE REPORT: REFERENCE LIST

Interventions for the Diagnosis of Lyme Disease: Clinical Effectiveness and Guidelines

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Research Questions

1. What is the clinical effectiveness of interventions for the diagnosis of Lyme disease?
2. What are the evidence-based guidelines regarding interventions for the diagnosis of Lyme disease?

Key Findings

One systematic review of guidelines and two evidence-based guidelines were identified regarding interventions for the diagnosis of Lyme disease.

Methods

A limited literature search was conducted by an information specialist on key resources including PubMed, the Cochrane Library, the University of York Centre for Reviews and Dissemination (CRD) databases, the websites of Canadian and major international health technology agencies, as well as a focused Internet search. The search strategy was comprised of both controlled vocabulary, such as the National Library of Medicine's MeSH (Medical Subject Headings), and keywords. The main search concepts were Lyme disease and diagnosis. Search filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, or network meta-analyses and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents. No date limits were used in the search. The search was conducted July 8, 2019. Internet links were provided, where available.

Selection Criteria

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

Table 1: Selection Criteria

Population	Any individual suspected of having Lyme disease
Intervention	Any intervention used to diagnose Lyme disease
Comparator	Q1: Any other intervention used to diagnose Lyme disease Q2: No comparator

Outcomes	Q1: Clinical effectiveness, safety Q2: Evidence-based guidelines
Study Designs	Health technology assessments, systematic reviews, meta-analyses, evidence-based guidelines

Results

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by evidence-based guidelines.

One systematic review of guidelines and two evidence-based guidelines were identified regarding interventions for the diagnosis of Lyme disease. No relevant health technology assessments were identified.

Additional references of potential interest are provided in the appendix.

Health Technology Assessments

None identified.

Systematic Reviews and Meta-analyses

1. Eldin C, Raffetin A, Bouiller K, et al. Review of European and American guidelines for the diagnosis of Lyme borreliosis. *Med Mal Infect.* 2019 Mar;49(2):121-132.
[PubMed: PM30528068](#)

Guidelines and Recommendations

2. National Institute for Health Care and Excellence. Lyme disease. (NICE guideline NG95). 2018; <https://www.nice.org.uk/guidance/ng95>. Accessed 2019 Jul 11.
See: Section 1.2
3. Mygland A, Ljostad U, Fingerle V, Rupprecht T, Schmutzhard E, Steiner I. EFNS guidelines on the diagnosis and management of European Lyme neuroborreliosis. *Eur J Neurol.* 2010 Jan;17(1):8-16, e11-14.
[PubMed: PM19930447](#)

Appendix — Further Information

Systematic Reviews and Meta-analyses

Alternative Outcomes

4. Brunton G, Sutcliffe K, Hinds K, et al. Stakeholder experiences of the diagnosis of Lyme disease: a systematic review. London: EPPI-Centre, Social Science Research Unit, UCL Institute of Education, University College London; 2017: <http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/Lyme%20isease%20stakeholder%20experiences%202017%20Brunton.pdf?ver=2018-04-23-155309-640>. Accessed 2019 Jul 11.

Guidelines and Recommendations

In Development

5. IDSA/AAN/ACR draft lyme disease guidelines [draft for public comment]. 2019; <https://www.idsociety.org/practice-guideline/Lyme-Disease-Guideline-Public-Comments/>. Accessed 2019 Jul 11.

Methodology Not Specified

6. Appendix: Laboratory testing for Lyme disease in Alberta. Edmonton (AB): Alberta Health Services; 2019: <https://www.albertahealthservices.ca/assets/wf/plab/wf-provlab-appendix-laboratory-testing-of-lyme-disease-in-alberta.pdf>. Accessed 2019 Jul 11.
7. AMMI Canada position statement on the diagnosis and treatment of people with persistent symptoms that have been attributed to Lyme disease. Ottawa (ON): Association of Medical Microbiology and Infectious Disease Canada; 2019: <https://www.ammi.ca/Content/03.17.19%20AMMI%20Canada%20Position%20Statement%20%28EN%29.pdf>. Accessed 2019 Jul 11.
See: Section 3
8. Nova Scotia Infectious Diseases Expert Group. Guidance for primary care and emergency medicine providers in the management of Lyme disease in Nova Scotia. Halifax (NS): Province of Nova Scotia; 2019: https://novascotia.ca/dhw/cdpc/documents/statement_for_managing_LD.pdf. Accessed 2019 Jul 11.
See: Diagnosis of Lyme Disease, page 2
9. Figoni J, Chirouze C, Hansmann Y, et al. Lyme borreliosis and other tick-borne diseases. Guidelines from the French Scientific Societies (I): prevention, epidemiology, diagnosis. *Med Mal Infect.* 2019 May 13.
[PubMed: PM31097370](https://pubmed.ncbi.nlm.nih.gov/31097370/)
10. Prince Edward Island guidelines for the management and control of Lyme disease. Charlottetown (PEI): Department of Health and Wellness, Chief Public Health Office; 2019: https://www.princeedwardisland.ca/sites/default/files/publications/lyme_disease_guideline_final_mar19.pdf. Accessed 2019 Jul 11.
See: Diagnosis, page 5

11. Miller JM, Binnicker MJ, Campbell S, et al. A guide to utilization of the microbiology laboratory for diagnosis of infectious diseases: 2018 update by the Infectious Diseases Society of America and the American Society for Microbiology. *Clin Infect Dis*. 2018 Aug 31;67(6):e1-e94: <https://academic.oup.com/cid/article/67/6/e1/5046039>. Accessed 2019 Jul 11.
See: Section XIII
12. Health Quality Ontario. Management of tick bites and investigation of early localized Lyme disease. (*Clinical guidance document*). Toronto (ON): Queen's Printer for Ontario; 2018: <https://www.hqontario.ca/Portals/0/documents/evidence/qs-clinical-guidance-lyme-disease-en.pdf>. Accessed 2019 Jul 11.
13. Lum GD, Hood JR, Wright P. An Australian guideline on the diagnosis of overseas acquired Lyme disease/borreliosis. Canberra (AU): Office of Health Protection, Australian Department of Health; 2015: [https://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-lyme-disease.htm/\\$File/Aust-guideline-diagnosis-overseas-acquired-Lyme-disease.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-lyme-disease.htm/$File/Aust-guideline-diagnosis-overseas-acquired-Lyme-disease.pdf). Accessed 2019 Jul 11.
14. Lyme disease. (*Public health disease management guidelines*). Edmonton (AB): Alberta Health: <https://open.alberta.ca/publications/lyme-disease>. Accessed 2019 Jul 11.
See: Diagnosis, page 6
15. Lyme Disease (Lyme Borreliosis). (*Communicable Disease Management Protocol*). Winnipeg (MB): Manitoba Public Health Branch; 2013: <https://www.gov.mb.ca/health/publichealth/cdc/protocol/lyme.pdf>. Accessed 2019 Jul 11.
See: Section 1
16. Huppertz HI, Bartmann P, Heining U, et al. Rational diagnostic strategies for Lyme borreliosis in children and adolescents: recommendations by the Committee for Infectious Diseases and Vaccinations of the German Academy for Pediatrics and Adolescent Health. *Eur J Pediatr*. 2012 Nov;171(11):1619-1624.
[PubMed: PM22782450](#)
17. The laboratory diagnosis of Lyme borreliosis: Guidelines from the Canadian Public Health Laboratory Network. *Can J Infect Dis Med Microbiol*. 2007 Mar;18(2):145-148.
[PubMed: PM18923770](#)
18. Brouqui P, Bacellar F, Baranton G, et al. Guidelines for the diagnosis of tick-borne bacterial diseases in Europe. *Clin Microbiol Infect*. 2004 Dec;10(12):1108-1132.
[PubMed: PM15606643](#)

Review Articles

19. Ruzic-Sabljić E, Cerar T. Progress in the molecular diagnosis of Lyme disease. *Expert Rev Mol Diagn*. 2017 Jan;17(1):19-30.
[PubMed: PM27892737](#)

20. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Technical report: Update on Lyme disease prevention and control. 2nd ed. Toronto (ON): Queen's Printer for Ontario; 2016: <https://www.publichealthontario.ca/-/media/documents/lyme-disease-prevention-technical.pdf?la=en>. Accessed 2019 Jul 11.
See: Diagnosis and Testing, page 15

Additional References

21. Zoonotic Diseases Technical Working Group. Tick borne diseases response plan. Halifax (NS): Province of Nova Scotia; 2019: <https://novascotia.ca/dhw/cdpc/documents/Tick-Borne-Disease-Response-Plan.pdf>. Accessed 2019 Jul 11.
See: Section 3.0
22. Report of the Lyme Disease and Tickborne Illnesses Task Force. Toronto (ON): Ontario Ministry of Health and Long-Term Care; 2018: http://www.health.gov.on.ca/en/common/ministry/publications/reports/lyme_18/ldtf_final_report_2018.pdf. Accessed 2019 Jul 11.