

Assessment & Prescribing Algorithm for ANTIBIOTIC PROPHYLAXIS TO PREVENT LYME DISEASE FOLLOWING A HIGH-RISK TICK BITE

ASSESSING THE PATIENT¹

Is the patient symptomatic following a tick bite?

- Erythema migrans rash (“bull’s-eye” rash – refer to references for detailed description^{2,3})
- Fever, chills, headache, stiff neck, fatigue, decreased appetite, muscle and joint aches, joint swelling, swollen lymph nodes.

YES

Refer to a physician or nurse practitioner.

NO

IS THE PATIENT AT HIGH RISK FOR DEVELOPING LYME DISEASE?⁴

(i.e. must meet **ALL** 3 of the following criteria)

1. Tick has been removed within the past 72 hours.
(If the tick is still attached, advise the patient to safely remove.⁵)
2. Tick bite occurred in an area where blacklegged ticks have been identified.
 - Refer to the Ontario Lyme Disease Map for estimated risk areas.⁶
3. Tick was likely attached for 36 hours or more

NO

If all 3 criteria are not met, do not prescribe antibiotic prophylaxis. Educate patient to monitor for symptoms for 30 days and see a physician or nurse practitioner if symptoms develop.

YES

PRESCRIBING ANTIBIOTIC PROPHYLAXIS:

- Adults: doxycycline 200 mg PO x 1 dose
- Children: doxycycline 4 mg/kg (maximum dose of 200 mg) PO x 1 dose (no age restriction)

DOCUMENTATION & FOLLOW-UP:

- Complete documentation & notify physician or nurse practitioner.
- Educate all patients to monitor for signs and symptoms for 30 days and see a physician or nurse practitioner if they develop symptoms.

PRESCRIBING CONSIDERATIONS:

- Doxycycline should be used for post-exposure prophylaxis in adults and children of all ages. Previously, doxycycline was not recommended for children < 8 years of age however this guidance has changed as dental staining is uncommon with short courses.^{7,8}
- If doxycycline is contraindicated (e.g. allergy, pregnancy), there are no alternatives. Do not prescribe other antibiotics for post-exposure prophylaxis. Educate patient to monitor for symptoms for 30 days and see a physician or nurse practitioner if symptoms develop.

REFERENCES:

1. Ontario College of Pharmacists. Pharmacist Practice Assessment Criteria [Internet]. 2017 Sep. Available from: <https://www.ocpinfo.com/library/practice-related/download/PracticeAssessmentCriteria.pdf>
2. Health Quality Ontario. Clinical Guidance Document. Management of Tick Bites and Investigation of Early Localized Lyme Disease [Internet]. Queen’s Printer for Ontario; 2018. Available from: <https://www.hqontario.ca/Portals/0/documents/evidence/qs-clinical-guidance-lyme-disease-en.pdf>
3. Health Canada. For health professionals: Lyme disease [Internet]. Available from: <https://www.canada.ca/en/public-health/services/diseases/lyme-disease/health-professionals-lyme-disease.html>
4. Clinical Practice Guidelines by the Infectious Diseases Society of America (IDSA), American Academy of Neurology (AAN), and American College of Rheumatology (ACR): 2020 Guidelines for the Prevention, Diagnosis and Treatment of Lyme Disease. Clinical Infectious Diseases [Internet]. 2020 [cited 2020 Dec 1]; Available from: <https://academic.oup.com/cid/article/72/1/e1/6010652>
5. Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), Division of Vector-Borne Diseases (DVBD), home, Ticks Home, Avoiding ticks, plus icon, Removing a tick, et al. Tick Removal [Internet]. Available from: https://www.cdc.gov/ticks/removing_a_tick.html
6. Ontario Agency for Health Protection and Promotion (Public Health Ontario). Ontario Lyme Disease Map 2021: Estimated Risk Areas [Internet]. Toronto, ON; 2021. Available from: <https://www.publichealthontario.ca/en/search#q=ontario%20lyme%20disease%20map&sort=relevancy>
7. Biggs HM, Behravesh CB, Bradley KK, Dahlgren FS, Drexler NA, Dumler JS, et al. Diagnosis and Management of Tickborne Rickettsial Diseases: Rocky Mountain Spotted Fever and Other Spotted Fever Group Rickettsioses, Ehrlichioses, and Anaplasmosis — United States: A Practical Guide for Health Care and Public Health Professionals. MMWR Recomm Rep. 2016;65:1–44. Available from: <https://www.cdc.gov/mmwr/volumes/65/rr/rr6502a1.htm>
8. Viel-Thériault I, Le Saux N. Lyme Disease. In: Therapeutics [Internet] [Internet]. Canadian Pharmacists Association; 2018. Available from: <http://www.myrxtx.ca>