

## Options to be discussed with an asymptomatic individual with a tick bite that occurred in a PEP (post-exposure prophylaxis)-designated area

This tool is intended for health professionals. Its purpose is to facilitate the discussion regarding the options to be presented to an asymptomatic individual with a tick bite that occurred in a PEP (post-exposure prophylaxis)-designated area. It is provided for information purposes only and should not replace the health professional's judgement. This tool is based on recommendations developed by INESSS, which can be found in the [Publications](#) section of its website ([inesss.qc.ca](http://inesss.qc.ca)).

### In what circumstances should this dialogue be initiated?

- When your patient (adult or child) has a tick bite and meets all the criteria for initiating PEP.



#### Shared decision-making <sup>1</sup>

The decision to take a single dose of antibiotic (doxycycline) following a tick bite to prevent Lyme disease has certain benefits and risks for your patient. The decision depends not only on scientific data, but also on the patient's values and preferences. A shared decision is made after a conversation in which you and your patient go over these aspects together.

- When initiating this discussion, explain to your patient that:
  - Lyme disease is an infectious disease caused by bacteria transmitted to humans by black-legged ticks that carry the bacterium.
    - The tick found on your patient could be of another species or may not carry the bacterium.
  - Lyme disease causes different symptoms (e.g., skin rash, neurological problems, heart problems and joint problems), which usually occur a few days to several months after the bite.

### Options to be explored with your patient

<p><b>OPTION 1:</b> Take a single dose of antibiotic...</p>	or	<p><b>OPTION 2:</b> Do not take a single dose of antibiotic...</p>
<p>...and watch for the possible occurrence of symptoms suggestive of Lyme disease</p>		

### What the scientific studies tell us

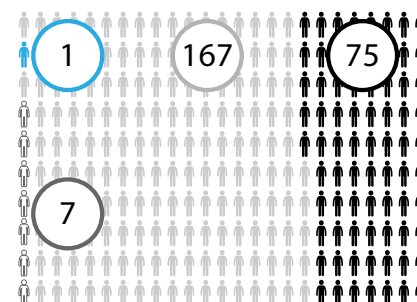
#### Risk of contracting Lyme disease in eastern Canada and the eastern United States

- The risk of developing erythema migrans (EM) after being bitten by a black-legged tick that carries the bacterium in a high-risk area (12 to 50% of ticks carriers) is low (1 to 3%).
  - When the tick carries the bacterium, the risk depends on how long it is attached to the skin.
    - If < 24 hrs (tick is flat/not engorged), the risk of contracting Lyme disease is low. However, the risk increases after 24 hrs.
- The risk of developing other manifestations of the disease is not known.

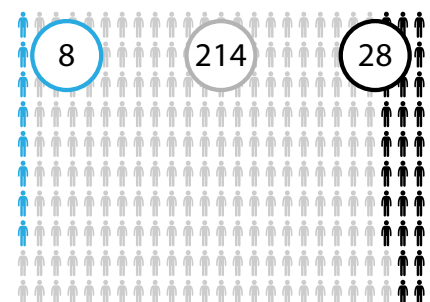
#### The efficacy of PEP

- A single study<sup>2</sup> carried out in a high-endemic (25-50% of ticks carriers) area of the United States found PEP to have an effect on preventing EM.
  - EM is often the first sign of Lyme disease. It is an expanding rash rarely painful or itchy.
- This study observed that, of 500 adults<sup>3</sup> bitten by a black-legged tick and treated with:

A single dose of antibiotic (n = 250):



A single dose of placebo (n = 250):



1. For information on shared decision-making with your patient, consult our website at [inesss.qc.ca](http://inesss.qc.ca).  
 2. Nadelman *et al.* N Engl J Med 2001;345:79-84.  
 3. The values from this study were rounded off to facilitate the discussion with the patient.

**It's important to explain the following to your patient:**

- The results of the American study may not be reproduced in different contexts (e.g., in terms of the rate of ticks that are carriers).
- There are no data on the efficacy of PEP in under-12-year-olds.
- There are no data on the efficacy of PEP in preventing symptoms other than erythema migrans.

Regardless of the option chosen, if the patient presents with symptoms suggestive of Lyme disease, s/he must consult a health professional so that their case can be evaluated.

- Rapid management after the occurrence of symptoms suggestive of Lyme disease increases the chances of healing.

**Watching for symptoms suggestive of Lyme disease is essential!**

### What's important to your patient

- Discuss the the pros and cons of each option in light of what is important to your patient. Help them determine the importance they attach to each argument using the following scale: 1 (Unimportant) 2 (Important) 3 (Extremely important). You can also discuss aspects not mentioned in this tool.

PROS	Level of importance attached by your patient	CONS	Level of importance attached by your patient
<b>OPTION 1: Take a single dose of antibiotic</b>			
The patient might feel that they have taken the means at their disposal to prevent Lyme disease	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	The patient could experience minor and transient adverse effects from the antibiotic	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>
<b>OPTION 2: Do not take a single dose of antibiotic</b>			
The patient may feel that it's not worth it to take an antibiotic, given the low risk of developing EM after a tick bite and the low clinical impact of this preventive measure	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>	The patient could harm their chances of preventing Lyme disease	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/>

### Does the patient feel ready to make a decision<sup>4</sup>?

- At the end of the discussion, ask your patient if s/he:

	YES	NO
→ Is sure about the best choice for her/him		
→ Feels that s/he has all the necessary information for making an informed decision?		
→ Is clear about which benefits and harms matter most to her/him?		
→ Has been given enough support and advice to make her/his decision?		

Check that your patient has clearly understood the importance of being on the lookout for symptoms suggestive of Lyme disease.

To this end, a [follow-up sheet](#) may be helpful.