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Life Cycle of a Tick & Lyme Disease Transmission

Ticks Need Many Other Hosts Before They Land On Your Dog

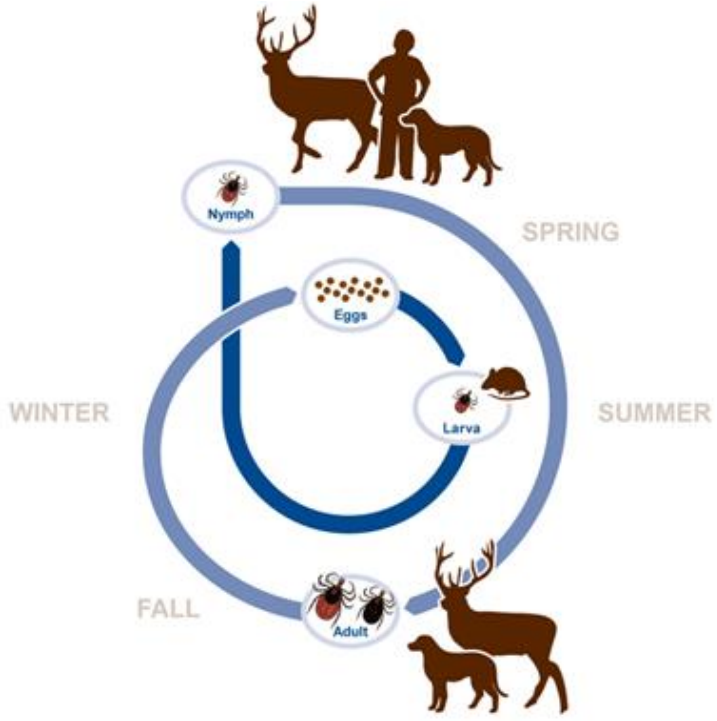
Most ticks, like *Ixodes* (X-oh-dees, the blacklegged tick) take two years to complete the four stages of their lifecycles. From eggs to larva to nymphs to adults, the *Ixodes* tick's survival is dependent on different hosts along the way to provide a blood meal. Did you know the tick spends less time on you or your dog than on these other hosts?

Life Cycle of a Tick

Stage One – Eggs The adult female tick lays her eggs on the ground in the spring.

Stage Two – Larva The egg hatches into larva and finds its first wildlife hosts (usually a mouse or other small mammal). After a blood meal, the larva detaches and falls to the ground, where it lies dormant during the winter.

Stage Three – Nymphs Larva develop into nymphs and begin feeding again on a variety of hosts (mice, deer, humans, dogs) that may be infected with a bacteria called *Borrelia burgdorferi* that causes Lyme disease.



Stage Four – Adults Feed on many different hosts, many of which in Lyme disease areas are infected with the Lyme bacteria organism. Ticks ultimately infect other hosts such as deer, humans and dogs.

Facts You May Not Know About *Ixodes* (the Blacklegged Tick)

- Each female tick lays more than 2,000 eggs!
- The tick must dine on blood from whatever host it can find
- Ticks are called "vectors", which means they carry and transmit disease
- Larvae have six legs but have eight by the time they are nymphs and adults
- Adult ticks are the size of a sesame seed or smaller before feeding
- Nymphs and adults transmit Lyme disease to dogs and humans
- You and your dog are most likely to encounter ticks from April to November, when nymphs and adults begin feeding
- You can only contract Lyme disease from ticks, not from dogs or other humans

Lyme Disease Transmission

An infected *Ixodes* tick (deer tick) transmits the *Borrelia burgdorferi* bacteria through the skin by a strong but painless bite. Most people and dogs do not even feel the bite, which is why the tick can remain undiscovered.

After the initial bite through the skin, the tick secretes "cement" to anchor to its host where it is difficult to remove. Then, it begins to take in its blood meal 30 minutes later.

But amazingly, unlike most other insect bites, the tick's bite is painless and non-irritating, because its saliva contains:

- An anesthetic to numb and reduce pain
- An antihistamine to reduce allergic reaction or itching
- An anticoagulant to stop bleeding
- An anti-inflammatory to reduce swelling
- An immunosuppressant to help aid in the transmission of the pathogens

It's no mystery why we're unaware we've been bitten by a tick!

Infection does not happen immediately

The blacklegged tick is very slow in actually transmitting the bacteria to dogs - about eight hours. This slow transmission of the disease demonstrates the importance of checking your dog for ticks after being outside, even in your own backyard. Brush your dog and look for ticks. Talk with your veterinarian about your lifestyle and potential risk factors so a comprehensive tick-borne disease prevention program can be employed for your pet (which may include Lyme vaccination).

Source: https://www.lymeinfo.ca/pet-ticks-life-cycle.aspx, https://www.lymeinfo.ca/pet-lyme-disease-transmission.aspx