LONE STAR TICKS

RISK TO DOGS, RISK TO HUMANS.

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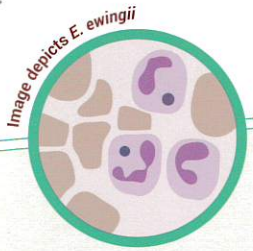
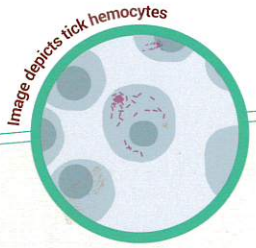
LONE STAR TICKS CAN TRANSMIT PATHOGENS.

While ticks are certainly an unpleasant sight for pet owners, hygiene is far from the primary concern. Lone star ticks can carry several pathogens that may be transmitted to the host during feeding. It's important to have a standardized plan throughout your clinic for prevention, diagnosis and treatment of each tick-borne disease.



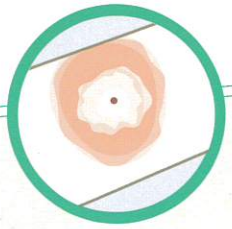
EHRLICHIA SPP.

Lone star ticks can transmit both *E. ewingii* and *E. chaffeensis*. In-house antibody tests do not distinguish between *E. canis* and other species. Consider clinical signs and CBC/platelet count to help determine if there is an active infection before making treatment decisions.



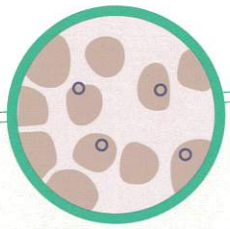
RICKETTSIA SPP.

While lone star ticks have been shown to carry *R. amblyommii* and *R. montanensis*, they have also been shown to infrequently transmit *R. rickettsia*, which causes Rocky Mountain spotted fever.[1] Antibody tests can't distinguish between these three pathogens, so clinical signs are very important to help diagnose Rocky Mountain spotted fever. Antibiotic therapy should not be delayed in a patient with signs suggestive of Rocky Mountain spotted fever.



STARI

Southern Tick-Associated Rash Illness (STARI) is associated with the feeding of lone star ticks, although the causative agent is unknown. STARI mimics the target lesion of Lyme disease in humans but is not known to cause clinical disease in pets.



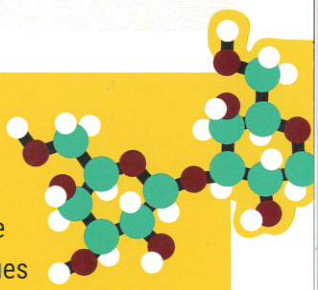
CYTAUXZOON FELIS

This feline pathogen can lead to potentially fatal disease. Infected cats may be jaundiced and painful on splenic palpation. Diagnosis can be confirmed with blood tests.

RED MEAT ALLERGIES: A UNIQUE RISK FOR HUMANS.

A 2009 study linked a series of allergic reactions in Virginia and Missouri to consumption of red meat.[2] Patients who had eaten red meat without a problem in the past now developed symptoms 3 to 6 hours after meat ingestion.

Comparison of geographical distribution of red meat allergy cases, tick-borne diseases, and tick distribution suggested a connection between lone star tick bites and red meat allergies.



ALPHA-GAL

Galactose-α-1,3-galactose (alpha-gal) is a carbohydrate normally present in the tissues of most mammals (except for humans and apes). After being bitten by a lone star tick, some individuals develop an allergic immune response to alpha-gal. A person who develops this allergy can have a severe reaction after ingesting red meat. Thus, the common name for this condition is "red meat allergy," or sometimes "alpha-gal syndrome." Blood tests have been used to identify patients with this allergy.

5 THINGS TO KNOW ABOUT LONE STAR TICKS.

Thomas N. Mather, PhD, Professor and Director, University of Rhode Island Center for Vector-Borne Disease and its Tick Resource Center, offers five unique facts about the lone star tick.

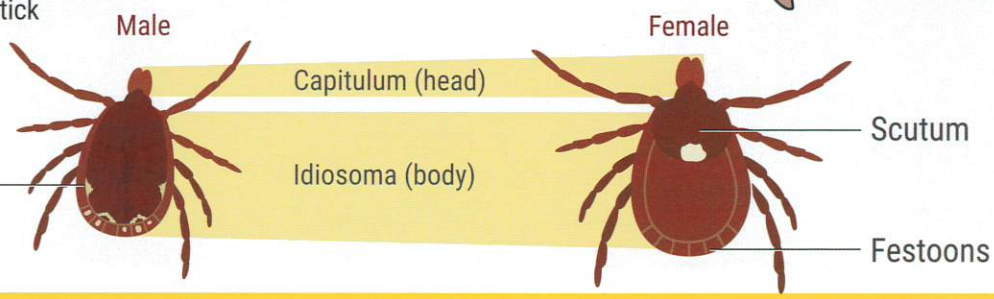
1 LONE STAR TICKS ARE FAST.

Lone star ticks move very quickly and will run aggressively toward a host. Compared to other ticks, they scramble quickly through fur or up a pant leg. Tick checks are very important, even if the pet has only been outside briefly.

2 LONE STAR TICKS ARE COMMONLY MISIDENTIFIED.

Steps to confirm a lone star tick:

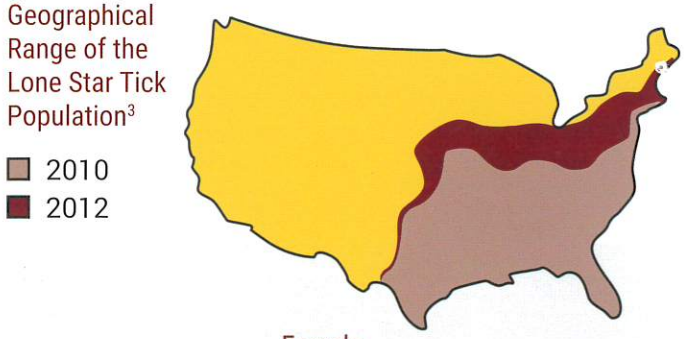
- Narrow your vision to just the scutum (or shield)
- Check for the distinctive white spot (or "lone star") which identifies the adult female lone star tick
- The adult male lacks the white spot but typically has spots or streaks of white around the outer edge of the body



3 LONE STAR TICKS ARE EXPANDING THEIR RANGE.

Information gathered from the TickSpotters program indicates that lone star ticks are spreading into the Upper Midwest. Dr. Mather suggests that the spread of this tick species is related to the increased abundance and suburbanization of white-tailed deer, a key host.

Geographical Range of the Lone Star Tick Population[3]



4 LONE STAR TICKS DO NOT TRANSMIT LYME DISEASE.

In a study testing more than 22,500 lone star tick specimens, there was no measurable prevalence of *Borrelia burgdorferi*.[4] This may be partly because this tick species rarely attaches to white-footed mice,[5] the primary reservoir of *B. burgdorferi*, but favors white-tailed deer, an animal rarely infectious for the Lyme disease germ. It could also be related to potentially borreliacidal properties of lone star tick saliva.

5 LONE STAR TICK LARVAE ARE TINY.

The larvae are so small they can crawl right through the fabric of socks! Wearing permethrin-treated clothing can help prevent bites. Look out for tiny, poppy seed-sized engorged larvae especially on pet's feet, or wandering loose in homes.

LONE STAR TIPS:

- Make a plan to handle tick-borne diseases in your clinic – Don't be caught surprised!
- If treatment fails initially, consider the possibility of a co-infection with several pathogens.
- Prevention is key.

References

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3. Data from CDC website https://www.cdc.gov/ticks/geographic_distribution.html
4. Stromdahl EY, Nadolny RM, Gibbons JA, Auckland LD, et al. *Borrelia burgdorferi* not confirmed in human-biting *Amblyomma americanum* ticks from the Southeastern United States. *J of Clin Microbiol*. 2015;53(5):1697-1704. doi:10.1128/jcm.03454-14.
5. Mather TN, Mather ME. Intrinsic competence of three *Ixodid* ticks *(Acari)* as vectors of the Lyme disease spirochete. *J Med Entomol*. 1990;27(4):646-650. doi:10.1093/jmedent/27.4.646.

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