

What's New with Ticks?

PLEASE NOTE: Much of the material for this article was graciously provided by Timothy McDermott, DVM, Dept of Veterinary preventive Medicine, The Ohio State University and Extension Educator, Franklin County, OH.

Most of us know that ticks are not insects but are arachnids like spiders and mites. We also know that they can “vector” or transmit bacterial and viral diseases to us and our dogs—things like Lyme disease and Rocky Mountain Spotted Fever. Ticks do not jump like fleas or run after their hosts or fly, they hunt by “questing”—they crawl up a leaf or stem, hang on with their back legs, and wave their other legs hoping to grab onto what ever passes by. Tick researchers have recently debunked these common myths:



- **Don't worry--Ticks are only active in summer/warm months. FALSE...** especially where winters have become milder, feeding ticks can be found year-round, even walking about when there is

snow on the ground!

- **Ticks live in the woods. FALSE...**While some species prefer wooded habitats, other prefer brush, grasslands, even open lawns! Brown dog ticks have been known to establish colonies entirely indoors!
- **Ticks must be attached at least a day or more to transmit illness, so if you pull one off that isn't very swollen, don't worry. FALSE...**It depends on the illness being transmitted and the species of host tick. For example, Lyme disease does seem to require about 24 hours or more of the tick feeding on its host to be transmitted, but Rocky Mountain Spotted fever may be fairly immediately transmitted as it has been found in the salivary glands of ticks. Powassan Disease requires only about 15 minutes of feeding for transmission, yet Anaplasmosis seems to require 12-24 hours.

Ticks used to be very regional. Some were found only in the east, others in the south, some out west, etc. But that is no longer true. We should all be aware of these expanding ranges in the USA:

1. **Brown Dog Tick:** Common now throughout the entire USA. This tick can establish itself indoors and live entirely within sheds, kennels, or homes. It carries Rocky Mountain Spotted Fever, Babesia, and other pathogens.
2. **American Dog Tick:** It is also very common, especially in the entire eastern half of the USA as well as California and Oregon. It can harbor and transmit Rocky Mountain Spotted Fever, Tuleremia, and other illnesses and lives in lawns, meadows, and grasslands.

3. **Black Legged (Deer) Tick:** Now found in the entire eastern half of the USA and most of the state of Texas. It transmits many diseases including Anaplasmosis, Babesiosis, Borrelia miyamotoi disease, Ehrlichiosis, Powassan encephalitis, and especially Lyme disease. Increasingly, the illness caused by this organism is Lyme encephalitis rather than the original form that primarily caused joint pain.
4. **The Lone Star Tick:** A new tick to the Midwest and northern states. It came up from southern and Southwestern states and is now found in much of the eastern USA including a large part of Texas. (*Note the pattern of spread here as ticks in general are marching northward and westward!*) These ticks can trigger a unique allergic syndrome in humans to mammalian red meat protein. This disorder, called Alpha-gal Syndrome, means affected individuals can no longer safely eat or handle beef, pork, lamb, venison, or other mammalian tissue. Lone Star ticks, like most ticks, carry other pathogens as well.
5. **Gulf Coast Tick:** This tick is related to the Lone Star tick and was originally a problem in the south along the border with Mexico associated with screwworm infestations. This tick has such large mouth parts that it makes a significant wound when it feeds. These wounds were then taken advantage of by the screwworm fly as a site to lay eggs and nourish its larvae—with devastating consequences for the host animal. While the US government has taken great steps to eliminate screwworm flies because of devastation to the cattle industry, there are still occasional outbreaks—most recently in the FL keys where wounds from gulf coast ticks facilitated a screwworm attack on our endangered Key deer. This tick can also vector leptospirosis and 4 other known diseases (Rickettsia parkeri, Canine Hepatozoonosis, Heartwater, and Tick paralysis). This tick likes lawns, pastures, and open meadows.
6. **Asian Longhorned Tick:** Yes, another accidentally imported creature is wreaking havoc. This tick was first found in New Jersey in 2010 on a sheep farm, but since then has expanded its range as far west as Ohio, Kentucky, and Tennessee. Alarmingly, a colony was also recently found in NW Arkansas! It is a **very aggressive** feeder and congregates on hosts in large numbers causing serious anemia and transmitting other diseases. This tick can breed by parthenogenesis—which means under some circumstances, no male is needed. A female who has fed on blood can simply produce thousands of clones of herself. So far attempts to stop this invasive species have failed. Partly because it resembles the more common native brown dog tick and may escape identification until it is well established in an area. The Asian Longhorned Tick has been documented in at least 15 states and is expected to spread throughout the eastern half of the USA. Based on the historical spread of other ticks and insect invaders, it is expected to be carried into California, Oregon, and the west coast as well. This tick carries a protozoal parasite that causes an illness like malaria in livestock that is called Theileria. Because it is so new to the USA, additional research is needed to better understand this threat and how to control it.

7. **Pacific Coast Ticks:** These have a broad host range, and are found predominantly in shrublands, chaparral, and along trails from Oregon to northern Baja. They, along with Rocky mountain ticks, and western black legged ticks still predominate as the main species of tick in the west and west coast of the USA. Traveling with your dog to these areas could bring these ticks to new ranges. These ticks also carry their own variants of Lyme disease, anaplasmosis, and others.

Based on what we now know about ticks, here are some good take home messages:

- What matters with tick borne diseases is PREVENTION—take steps to stop ticks from attaching to and feeding on you and your dogs. This means avoiding known habitats when you can. Consider using tick repellents (permethrin) on your clothing and appropriate repellents on yourself and your dogs. Talk to your veterinarian to assess your dogs' risk and the best options for you to prevent tick bites. Check your dogs for ticks daily where ticks commonly attach and feed—around ears, on the face, between toes, under the tail... but realize that they can attach anywhere, even in the gum line!
- While ticks may seem more active at certain times, ticks can be found during all 4 seasons—engorged black legged deer ticks have been found walking over the snow!
- Because ticks are expanding their range northward and westward (likely due to warmer winters) we are seeing new types of ticks and new disease variants in their new ranges. Save ticks you find and get them identified. This is especially important if you or your dog becomes ill after a tick bite. Illnesses can show up days, weeks, or months later.
- Ticks should be taken seriously—they can carry and transmit bacterial, viral, and now even ALLERGIC syndromes.



Quick tick removal tip:

Don't try to smother them, burn them or squeeze them! Time matters. You want the tick off you or your pet ASAP and you want it intact.

Use an inexpensive tick puller (available in pet shops and online) or a simple thin nosed tweezer, or if necessary, your gloved fingers (disposable nitrile gloves work great). Grasp the tick as close to its mouth parts as possible the gently pull straight up until it releases. Do not twist, bend, or squeeze the tick. It may come off with some tissue in its mouth—that is just fine. Place the tick in an empty jar or pill bottle, screw or snap on the lid, and save it for identification! Clean the wound, even if very small, with soap and water and apply alcohol or a wound disinfectant cream. Make note of the day the tick was found in case illness develops later.

In some states, cooperative extension services or public health departments will assist you in identifying your tick and can aid in testing ticks for diseases they may be carrying. Many states may have ongoing surveillance programs because of the expanding ranges and concern about non-native invaders. Contact your state or county offices for more information. You are also encouraged to take photos of ticks and send them to the research study at the University of Rhode Island (see refs. Below for “tick encounter”). They may be able to help you identify your tick and help you decide if further testing is warranted.

Be safe!

By Carol Stephenson, RVT, PhD

Useful references:

https://www.cdc.gov/ticks/geographic_distribution.html

https://tickencounter.org/tick_identification

https://tickencounter.org/tickspotters/submit_form

https://tickencounter.org/tick_testing