

CFC protocol for ticks found on a dog in clinic

General information about ticks:

A) What do ticks look like, where do they live, and what are the signs of ticks on a dog:



Different stages of tick growth (1)



Engorged tick (2)

The appearance of a tick will depend on the growth stage of the tick and the type of tick. A single tick will progress through four stages of development in its lifetime: egg, larva, nymph, and adult. (1) Depending on the species, adult ticks can be as small as a 1/4 inch long, whereas engorged ticks (that have feasted on blood) are larger. Tick larvae have six legs while nymphs and adults have eight legs. Their mouthparts, the parts that attach to the host, consist of two parts, one of which cuts through the skin, and the second part functions like a barbed needle, making the tick difficult to remove. Hard ticks also have a tough shell on their backs. Ticks of all life stages can live on dogs. Once a tick is embedded into a dog's skin, it might look like a raised mole or dark skin tag. Regular tick checks on dogs at risk of tick infestation are essential. Check your dog after hikes, trips to the park, and outdoor playtime. Before a tick attaches, its movements often give it away. If you see a small, brownish arachnid moving on your dog, pluck it off immediately with gloves or a tissue if possible and kill it by putting it in a jar of rubbing alcohol. Once a tick is embedded into a dog's skin, it might look like a raised mole or dark skin tag. Since it can be hard to distinguish from a small bump, you'll have to look very closely for telltale signs such as the hard, oval body, and eight legs. (2)

The most impactful consequence of a tick bite has to do with disease transmission to both animals and humans. These eight-legged arachnids can transmit dangerous tick-borne diseases like Rocky Mountain Spotted Fever, Lyme disease, anaplasmosis, and ehrlichiosis. There are several species of ticks that can transmit

pathogens to dogs. Identifying what they look like and their characteristics can help your veterinarian diagnose and treat your dog if symptoms become present. Therefore, it is important to preserve the tick once it's removed. (2) The nymph tick is most active in the spring through the summer months, and it's about the size of a poppy seed. Nymph ticks are actually the most likely to transmit Lyme disease or another tick-borne infection to humans (and dogs) than ticks at other stages, according to the CDC. Less than two millimeters in size, nymphs can bite people and remain virtually undetected. They also burrow into your or your pet's skin. Although adult ticks may also transmit Lyme disease, they're much larger, so you're more likely to see them and promptly remove them. Ticks are sneaky little bloodsuckers, and they've evolved with some sophisticated mechanisms to bite their victims. Their saliva contains natural anesthetic and immune suppressors to ensure that you don't feel anything at all when they jab you to feed. (1)

Ticks are present in all 50 states of the US and in Canada. (2, 3) In Canada, ticks and tick-borne diseases are more prevalent in prime resting areas for migratory birds such as the northern shores that border the US and Canada and expand outward from those areas. Their activity increases early in the spring. Charts that represent not only when and where ticks are found, but also reflect data about their species and life stages have been created. These charts are based on the most relevant tick species and life stages, revealing important information about what species and life stages are most prevalent at different times throughout the year. (3) Common tick species found in Canada include the black-legged tick, more commonly known as the deer tick, the brown dog tick, the American dog tick, and the Rocky Mountain wood tick. (4)

Ticks live in densely wooded areas, forests and grasslands, although the Rocky Mountain tick prefers areas of brush at higher elevations. To attach themselves to a host, ticks either grasp onto random animals as they pass over their habitat or wait for potential hosts to brush up against them. (4)

The main signs of a tick bite or infestation are excessive scratching or licking in any particular areas. This can be a sign that a tick has attached itself to the skin in this spot. (5) Keep in mind that just because a tick starts off on your dog doesn't mean it won't end up catching a ride into your living room and burrowing its way

into your thigh. So, protecting your dog from ticks protects you and your family from them too. (5)

B) What is the life cycle of a tick:

Tick lifecycles can last upwards of two to three years. They consist of the abovementioned four stages: egg, larva, nymph and adult. In order to progress to successive life stages, ticks must successfully feed on a host (also known as having a blood meal). Hosts can include mammals, birds, reptiles, and amphibians. Tick eggs are often laid in the spring after female ticks complete their two to three-year life span. Eggs are often brown and red in color and appear to be translucent. One tick can lay thousands of eggs. While ticks need to detach before laying eggs (and therefore can't lay eggs directly on a host), eggs can be found under leaf litter, leaf brush and other warm, soft places outside. Ticks mainly become infectious once they absorb a pathogen from one of their hosts during the larvae stage, yet the ticks themselves will not suffer any ill effects of the infectious pathogen they have become infected with. (3) If a larval tick becomes infected with Lyme disease or another tick-borne illness, they will maintain the infection throughout the remainder of their life. Larvae can get infected with a second tick-borne disease making them co-infected with various pathogens. (3, 6) When the larvae are finished feeding on their first host, they'll fall to the ground and begin molting between the fall and the spring as they transition to the next lifecycle stage – nymphs. At this stage, they have eight legs and are most active when the weather is above 3°C. During the colder months, nymphs will sit dormant under leaf litter, snow cover, or shaded area. Once attached to their host, nymphs will feed for four to five days before dropping off to start transitioning into their final life stage – an adult. During the fall, when the nymph falls off its host and transitions into an adult, it will look for its third and final host. During winter, adult ticks which are unable to locate hosts retreat underneath leaf litter or other surface vegetation, becoming inactive in temperatures below 37 degrees Fahrenheit but not dying. After feeding on their final host, and depending on the weather and time of year, ticks will look to begin mating. Males typically die after mating with a female, and females will reproduce by laying thousands of eggs during the spring and die shortly thereafter, thereby completing the tick lifecycle. (6)

C) Removing ticks from dog at home:

1. You should check your dog for ticks after hikes, trips to the dog park, and playtime in the backyard: it's advised to check your dog by moving from head to tail, running your hands all over with gentle pressure to feel for small bumps. Look in the ears, under the collar, between the toes and around the tail, moving the hair aside and looking at the skin to see if ticks have attached. Regular checks can help you find ticks before they attach, reducing the risk that they'll spread disease. (2)
2. To remove an attached tick: use a pair of fine-point tweezers or a tick-removal tool to avoid tearing the tick and spreading possible infections into the bite area. Grab the tick as close to your pet's skin as possible and pull straight up from the body surface, being careful not to pull any fur at the same time. You might notice a welt in the spot where you removed the tick, especially if the mouthparts weren't fully removed. If the mouthparts do stay in, you might have to go to the veterinarian because they have better tools to get those out. Never remove a tick with your fingers—it's not only ineffective, but the squeezing may also further inject infectious material. After you've removed the tick, make sure to wash your hands thoroughly, clean the bite site with rubbing alcohol, and rinse the tweezers or tool with disinfectant. After removal, clean your dog's skin with soap and warm water or apply a dab of triple antibiotic ointment. (2, 7, 8, 9) Sometimes the skin will just close over the remaining mouthpart but it could get infected to the point where you would need more advanced wound care or antibiotics. So, if you can't get it all out, it is important to watch the area or call your veterinarian for advice. Talk to your veterinarian about which year-round tick prevention is best for your dog and your family's lifestyle. (3)
3. Groom your dog: Since ticks are usually dark colored and like to hide in deep and dark areas, they may be hard to see on dogs that have longer and/or darker coats. Getting your dog groomed will make the search easier. (3, 6)
4. Use chemical treatments. Sterifab is a highly effective aerosol spray in killing ticks (as well as fleas). (10) People and pets shouldn't come into contact with the spray until it has dried. Be sure to wear gloves when you apply the spray, and only spray when everyone is out of the house.

5. Prevention and treatment of tick infestation:

a) Oral medications: tick prevention medications are poisonous to insects but not harmful to mammals. They absorb into a dog's bloodstream as well as into the tissue fluids just under their skin, where they're transferred to any biting ticks, which then become dead ticks. One benefit of oral options is that they prevent future infestations. Experts agree that you should stick to newer classes of medication, since ticks can become resistant to certain chemicals over time. For example, Frontline has been around for 25 years now, and it's not as effective as it was when it first hit the market. Some oral tick preventatives are not recommended for dogs with a history of uncontrolled seizures. (8)

b) Bravecto is a chewable oral treatment which is also available in a topical form and protects dogs from ticks and fleas for three months at a time. Bravecto starts killing embedded ticks in as little as 12 hours. (8)

c) Topical treatments are recommended for dogs with gastrointestinal issues. Another reason to reach for a topical treatment is that they tend to repel ticks better than the oral medications. Another advantage of topical medications is that the dog doesn't actually get bitten, and ticks (or fleas) don't get brought into your house. There are a ton of topical tick repellents on the market, however, over the counter treatments are not as effective and as the well-regulated prescription products. In highly endemic areas, sometimes a double protection is recommended, such as a repellent collar in addition to other type of tick medication or repellent. (8)

D) Removing ticks from outside spaces where ticks may live:

If you live somewhere with a backyard, look at ways to reduce the number of ticks (and mice, as these can also be carriers of infectious agents that can be transmitted by ticks) on your property. Ticks are frequently found on the ends of branches and shady, overgrown vegetation. Clearing away any dead branches, grass clippings, or piles of leaves, and keeping your grass cut short can help reduce their presence. (5)

E) What to do if a tick is found on a dog in clinic:

1. Remove dog from clinic. Immediately after a tick is discovered on a dog's skin, the client should be politely informed that we have a protocol in place to

contain a potential tick infestation that requires the potentially infected dog to be removed from the clinic immediately. Also inform the client that we can provide them with information regarding diagnosis/ treatment / control of tick infestation in their dog and home.

2. Remove and wash blanket. Once the dog is removed from our premises, the blanket where the dog was laying should be gathered in a bunch and placed directly into the washer and washed immediately OR placed in a plastic bag immediately or, setting the water temperature at the hottest possible setting, or 'Sanitize' in our current washer. If the washer is in use and not immediately available, keep the blanket in the plastic bag until the washer becomes available and proceed with washing the blanket as described above. Set the clothes dryer also in the hottest possible setting and proceed to dry the blanket. The blanket should be washed and dried along with the clothes of any staff that would have become in contact to the infested dog.

3. Change clothes. Anyone that has been in contact with the dog should change their clothes and place the exposed clothes directly into the washer or in the plastic bag containing the blanket. Proceed to wash as described above.

4. Vacuum the room thoroughly. Once the dog and the blanket have been removed, vacuum the floor in the entire room VERY thoroughly, making sure to get under the chairs, desk, bench, etc. Empty the vacuum cleaner into a plastic bag and dispose of it directly into the outside dumpster.

5. Provide information to the owner. Once the owner and dog have left the premises, provide owner with written information (see file) as to how to proceed to exterminate ticks at home and recommend to seek veterinary advise.

References:

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