Education Newsletter

Edition 2, April 30, 2020, BARRC Education Committee

For the second edition of the education newsletter it was requested that we talk a little about ticks and tick prevention. With all the hubbub going on with the COVID-19 virus pandemic, I thought it also might be good to talk about the virus and our beloved dogs. Also, as this newsletter reminded you last edition, please don't forget about the dangers of rattlesnakes this year. They are prevalent and showing up in areas where they haven't been commonly seen before. Although the quarantine has made it difficult to get to dog events, many rattlesnake avoidance classes are still being offered with a limited number of people and safe distancing. - Wendy Peirce, Editor and Chair, BARRC Education Committee

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Ticks and Dogs

Ticks are nasty little blood sucking devils. Not only do they cause pain, they transmit nasty diseases. Ticks can be active throughout the year, but they are generally more of a pest between spring and autumn. So, it's that time of year again when we all have to be vigilant about checking our dogs (and ourselves) for these creepy crawlies whenever we are tick territory, and those places abound in California and the Pacific Northwest.

Ticks are common in woodland, grassland, and chaparral areas, but can also be found in your garden if you live in an area with lots of wildlife. You are most likely to come across them in areas where there are deer. Although many people think that ticks drop from trees, they don't. They are generally picked up by brushing by them when walking through grasses or shrubs.

The geographic distribution of ticks is changing due to climate change, deforestation, and the changing living and migrating patterns of deer, birds, and rodents. This can vary yearly or even by season. Ticks are in virtually all parts of the United States, including some urban areas, and many parts of the world. In California there are 47 species of ticks; 8 bite humans and it is these same 8 species that are also known to be a problem for dogs. For more information on these 8 species of ticks and the diseases they can transmit to canines, please see the "more than you ever wanted to know about ticks" section of this newsletter.

How to Prevent Tick-Borne Diseases

The ticks prevalent in our area and the diseases that can transmit present a serious risk to the health of our Rhodesian Ridgebacks and to us! The best way to prevent a tick-borne disease is to keep ticks from biting your dogs or better yet, keep them off your dogs entirely. So, how do you do that safely?

Recommended tick preventatives range from natural, organic sprays made from ingredients you may have in your kitchen, to veterinarian recommended oral and topical medications that may have side effects, to preventatives used on your lawn and garden. Although extensive research has been done for this article, no single recommendation on a tick prevention that is both effective and completely safe is offered. Instead, what is shown below is a variety of tick preventatives that dog owners around the country have suggested are effective. If you think

you have the perfect Ridgeback tick repellant and it is safe, please let the editor of the newsletter know and an update will be published. Most tick preventatives also work for fleas.

Tick Prevention Type	How it Works	Pros	Cons	Examples
Spot-on	Apply to dog's skin to keep ticks away. Lasts for up to a month.	Effective; great for use only when needed.	May contain chemicals that impact dog's health and anyone touching dog after treatment.	• Frontline • Bio Spot • Revolution • Avantix • Dr. Mercola Herbal • Neem oil
Oral	Pills given once a month. Kills ticks on dog.	Effective, easy to use, no danger of human exposure to ingredients.	May contain chemicals that impact dog's health.	• Trifexis • Flea Treats • Nexgard • Bravecto • Springtime Bug Off Garlic • Brewer's Yeast
Shampoos	Kills ticks on contact; residual effectiveness is limited to 2 weeks maximum.	Inexpensive. Good for quick eradication of tick exposure.	Short-term exposure to chemicals for both dog and human bathing the dog.	• Tropiclean Opti Neem • Paws & Pals • Sentry Oatmeal • Wondercide Geranium • Hartz Ultra Guard
Dips	Soak dog's coat with diluted dip. Dip is not rinsed off.	Quick and effective way to remove ticks from heavily infested dogs.	Very strong chemicals. Do not use on young dogs or pregnant or nursing bitches.	• Happy Jack Kennel Dip • Adams Plus • Apple cider vinegar • Biogroom
Collars	Tick repellant.	Easy to use, inexpensive.	Effectiveness may be limited to head and neck area. May cause allergic reaction or discomfort.	• Seresto • Preventic • Only Natural Pet Easy Defense • Earth Animal Herbal
Powders	Kills and repels ticks. Needs to be applied once a week.	Can be applied to bedding and in other doggy areas. Inexpensive	May contain chemicals that impact dog and human health. Fine powders can be irritating to mouth and lungs.	• NaturVet Herbal • Zodiac • Harris Diatomaceous Earth (food grade) • Hartz Ultra Guard • American Pet
Sprays	Kills ticks quickly and provides residual protection.	Good for use right before spending time in tick territory.	May contain chemicals that impact dog's health. Keep away from dog's face.	• Hartz Ultra Guard • Wondercide • Vinegar & water • Some essential oils • Kin & Kind • Green Mountain
Habitat	Sprays and granular treatments can reduce tick habitats around houses and gardens.	Good for reducing or eliminating ticks from dog's living environment.	May contain chemicals that impact both dog's and human's health as well as other life in the treated areas.	• Advantage • Black Flag • Martin's • Eco Defense • Vet's Best • Diatomaceous earth

Please note that many of the products listed above contain pesticides and although the manufacturers and your veterinarian may deem the product safe, the impact of long-term exposure or cumulative exposure from flea and tick preventatives plus environmental pesticides had not been sufficiently studied. Studies that have been done show that the effects of excessive pesticide exposure can include head-nodding; facial twitching; exaggerated blinking; gag responses; weight increase of the spleen, thymus, and adrenal glands; and/or atrophy of the thymus. Long-term studies, needed to understand the chronic effects of the pesticides, are few by comparison. Chronic disease such as cancer, immune suppression, developmental or reproductive damage, and DNA damage can take months or years to manifest. Based upon toxicological studies, a dog suffering from chronic liver, kidney, thyroid, adrenal, spleen, lung, brain or gonadal conditions could experience heightened states of chronic diseases, with the potential for development of cancer. Tick prevention should be cautiously chosen and judiciously used.

Checking Your Dog for Ticks

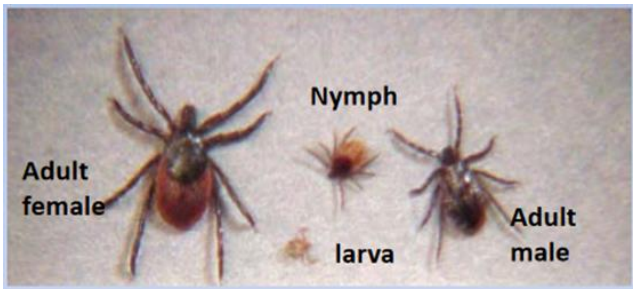
How can a creature that is so tiny move so fast and find the most obscure places to bury its proboscis (cheliscerae) into your dog? Whenever you've taken your dog out into tick territory, you should give him or her a good once over. And that means ALL over. Fortunately, Rhodesian Ridgebacks have very short hair and that helps when looking for ticks. Don't forget to look between toes and the pads of the feet, inside the ears, behind the ears, all over the body, around the dog's genitals and, yes, even inside the mouth! Ticks can be found in the most unusual places. If you do find a tick, it is important to quickly remove them and dispose of them safely. If they have already bitten, then removal before they are engorged with your pup's blood will help prevent disease.

Removing a Tick from Your Dog

If tick prevention didn't work and you unhappily find that your dog has one of those thirsty little buggers attached, you want to make sure that you remove the entire tick. It is very easy to leave part of the tick attached which can result in infection. There are lots of ways to remove ticks safely. Here is a link to a method that is recommended by many veterinarians: [How to remove a tick from a dog or cat]

More than You Ever Wanted to Know About Ticks

There are two types of ticks "hard" or Ixodid ticks and "soft" or Argasid ticks. Hard ticks have a hard outer covering and have three life stages (larva, nymph, and adult). Males can look significantly different than the females. They feed once per life stage, for days at a time. The larvae rarely bite dogs or humans. Of the 8 species that bite dogs in California, 5 of them are hard ticks:



American dog tick (Dermacentor variabilis), sometimes called a wood tick. They are widely distributed east of the Rocky Mountains, but they also occur in limited areas on the Pacific Coast. These nasty little creatures are vectors of **Rocky Mountain spotted fever**, tularemia (see Pacific coast tick below) and Canine Ehrlichiosis (see Brown dog tick below) in canines. Rocky Mountain spotted fever is one of the more commonly known tick-borne diseases to affect dogs and humans. Signs include fever, poor appetite, swollen lymph nodes, and joint pain. Low platelets, which help in blood clotting, are often found. On occasion, neurological signs such as wobbliness can also occur. The highest risk of being bitten occurs during spring and summer. Adult females are most likely to bite.

Brown dog tick (Rhipicephalu sanguineus). These ticks can be found worldwide and are ubiquitous across the United States. Dogs are the primary host for this tick in each of its life stages, but it also may bite humans and other mammals. Like the American dog tick, this tick is responsible for transmitting Rocky Mountain spotted fever and **Canine Ehrlichiosis** to dogs. Signs of Canine Ehrlichiosis include fever, poor appetite, and low blood platelets (cells that help the clotting of blood), often noted by nose bleeding or other signs of bruising or anemia. Signs start about 1-3 weeks after the bite of an infected tick. Dogs diagnosed and treated promptly can have a good prognosis, but those who go on to the chronic phase have more difficulty recovering.

Pacific coast tick (Dermacentor occidentalis). Pacific Coast ticks are predominantly in shrublands, chaparral, and along trails from Oregon to northern Baja California and Mexico. Pacific Coast ticks are the most common tick found nearly throughout California but are easily confused with the other less-common American dog ticks and Rocky Mountain wood ticks found along the western coastal regions. All life stages of the Pacific coast tick can transmit Rocky Mountain spotted fever and **tularemia** to dogs. Signs of illness from tularemia may include swollen glands, the sudden onset of high fever, lethargy, and poor appetite. Other signs may include stiffness and reduced mobility along with increased pulse and respiratory rates may also be increased. The infected dog may have a cough, diarrhea, and frequent urination. Very mild cases without signs are common but dogs can succumb to tularemia in a matter of hours or days without early treatment with an antibiotic. Animals that recover develop a long-lasting immunity.

Rocky Mountain wood tick (Dermacentor andersoni). This tick was primarily found in the Rocky Mountain states and southwestern Canada from elevations of 4,000 to 10,500 feet but it has expanded its territory west all the way into eastern California, Oregon and Washington. Adult ticks feed primarily on large mammals. Larvae and nymphs feed on small rodents. Adult ticks are primarily associated with pathogen transmission to dogs and humans. Like the ticks above, the Rocky Mountain wood tick can transmit bacterial infections, Rocky Mountain spotted fever, and tularemia, but it can also transmit the viral **Colorado tick fever.** Colorado tick fever symptoms include lethargy, loss of appetite, weight loss, abnormal bleeding, enlarged lymph nodes or spleen, pain and stiffness. There is no specific treatment.

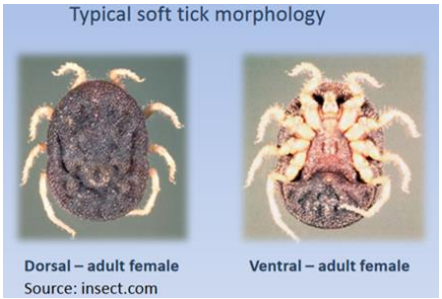
Western blacklegged tick (Ixodes pacificus) also known as the deer tick. This tick is found along the Pacific coast of the U.S., particularly northern California. Its nymphs often feed on lizards, as well as other small animals. Stages most likely to bite humans are nymphs and adult females. This nasty creature is the tick responsible for **Lyme disease** in the west. To transmit Lyme disease, the tick has to be attached to its host for about 36-48 hours for transmission of bacteria into the host, and signs of illness occur about 2-5 months after a tick bite. Because of this, it is important to do a thorough check for ticks and remove them promptly after a walk in the woods or other grassy or shaded areas where ticks may reside. In urban areas, that may include your

local dog park. Signs of Lyme disease may include fever, lameness, limping, joint pain/swelling, enlargement of lymph nodes, and lethargy. Lyme disease can progress to kidney disease, which can become fatal. Note: Unlike Lyme in humans, dogs do NOT develop a "bull's eye" rash. The treatment of a dog that is positive on the initial test but is otherwise healthy remains controversial among some veterinarians. When the decision to treat a dog with Lyme is made, dogs are usually placed on antibiotics for 28-30 days. There is a vaccination for Lyme disease. Though some question its duration and efficacy, the vaccine may reduce the rate and severity of the illness should it appear.

The Western Blacklegged tick is also responsible for carrying and transmitting **Anaplasmosis** to dogs. Although Anaplasma can be seen worldwide, in the North America it is a disease caused by a two species of bacterium: Phagocytophilum in the Northeast and the upper Midwestern United States and Platys in California and coastal states. The sypmtoms of the disease are similar to Lyme disease, though dogs with Anaplasma often also have low blood platelets that cause bleeding disorders.

There are other tick-borne diseases that are not specific to a particular hard tick species. These include:

- **Babesiosis** is a canine disease primarily transferred by the bite of a tick, but can also transfer from dog bites, transplacental transmission and possibly through contaminated IV blood. The main issue associated with Babesiosis is "hemolysis," or the breaking down of red blood cells. Symptoms include lethargy, pale gums, dark-colored urine and jaundice
- **Hepatozoonosis** is slightly different in that the infection is acquired after a dog ingests an infected tick rather than being bitten by it. This disease is generally found in the southern United States and not in California or the Pacific Northwest but it is interesting given the method of transmission. Signs of the disease are pain and reluctance to stand or move, fever, muscle wasting, and mild to moderate anemia. This disease is severely debilitating and often fatal.



Now if that weren't enough, out of the 8 tick species in California that bite dogs, we still have 3 soft ticks to cover. Soft ticks have a soft outer covering and have multiple life stages including egg, larva in eggshell, four nymph stages and then adult. Each life stage may feed several times, but for only minutes at a time. Most hosts, human or canine, don't know they have been bitten by a soft tick. These ticks are still dangerous though, because like the hard-covered ticks, they can also transmit a deadly disease to both humans and dogs.

The three species of soft ticks are: Ornithodoros hermsi, Ornithodoros parkeri, and Ornithodoros coriaceus and these little devils are known for their transmission of **tick-borne relapsing fever (Borreliosis).** Tick-borne relapsing fever is a potentially fatal infection in dogs with fairly nonspecific symptoms that include lethargy, fever, lameness or hind limb weakness, arched back, weight loss, anemia and, in some, neurological signs and ocular lesions. Dogs are most likely to be fed upon by Borrelia-infected Ornithodoros ticks when they spend time in tick-infested sheds or barns or while rooting around in excavated or underground burrows or caves.

References:

1. Blue Cross for Pets (2020), Dogs and Ticks, Blue Cross for Pets Online
2. Division of Vector-Borne Diseases (2020), Regions Where Ticks Live, Centers for Disease Control and Prevention, National Center for Emerging and Zoonotic Infectious Diseases
3. Dr. Jerry Klein, CVO (2019), AKC's Chief Veterinary Officer Weighs in on Tick-Borne Diseases, American Kennel Club
4. Nusirat Elelu (2018), Tick-borne relapsing fever as a potential veterinary medical problem, Vet Med Science
5. Tick Encounter Resource Center (2018), Dermacentor Occidentalis (Pacific Coast Tick), University of Rhode Island
6. Vector-Borne Disease Section (2020), Epidemiology and Prevention of Tick-Borne Diseases in California, CA Department of Public Health
7. Kathleen Dudley (January, 2002), Are Topical Flea Killers Safe, Whole Dog Journal

COVID-19 and Canines

Coronaviruses are a very diverse family of viruses. Coronaviruses have spiky projections on their surface that look like crowns. Corona means “crown” in Latin and that’s how this family of viruses got their name. They have a large host range, which includes dogs, cats and humans. However, the greatest amount of coronavirus diversity is seen in bats.

Canine coronavirus (CCoV) is a highly infectious intestinal disease in dogs, especially puppies. Feline coronavirus is common in cats and, except for mild diarrhea in some cases, it is usually an asymptomatic infection. Neither canine nor feline corona viruses are transmittable to humans.

COVID-19 is the disease caused by the novel (new) SARS-CoV-2 coronavirus. Although probably originating from a bat, COVID-19 was thought to be exclusively a human disease and not transmittable to or from pets. In early April, however, cases of COVID-19 were discovered in eight tigers and other large cats at the New York City Zoo. An asymptomatic zoo worker is thought to have passed the disease to the big cats. More recently two house cats and an older pug have tested positive as well. One of the cats lived with humans that had the disease. The other cat’s owners were asymptomatic but may have carried the disease. The pug lives in a household where two of his people were healthcare workers that also tested positive. A third person along with another dog, cat and lizard tested negative for the virus.

In Hong Kong and in Europe there have been a few other cases reported of apparent human to canine transmission of COVID-19. In all circumstances the pets’ symptoms are mild.

One 17-year-old Pomeranian who tested weakly positive for the virus in February and early March but tested negative on March 12th, died on March 16th. This is the only death reported for a canine that has contracted COVID-19 and, given the dogs age and pre-existing conditions, the virus has not been identified as the cause of death.

Although it looks like human to canine transmission of COVID-19 is possible, it appears to take prolonged and significant exposure. It does not appear, at this point in time, that there is canine to human or even canine to canine transmission of the disease. According to the Centers for Disease Control, “there is no evidence that pets play a role in spreading the virus in the United States. Therefore, there is no justification in taking measures against companion animals that may compromise their welfare.”

References:

1. Centers for Disease Control (April 2020), COVID-19 and Animals
2. AKC (April 2020), Can Dogs Get Coronavirus?
3. AAHA (March 2020), First dog to test positive for coronavirus dies

Coming in the Next Edition

PERFORMANCE RIDGEBACKS

TIPS AND TECHNIQUES FOR MAKING YOU AND YOUR RIDGEBACK A SUPERSTAR TEAM ALONG WITH HOW AND WHERE TO COMPETE

Please send me your favorite ways of teaching your dog to back up, to do weave poles and other tricks!
wendypeirce@gmail.com

The Puppy Corner

Puppy vaccinations can cause confusion. What is the best age to start? Will they be protected? Why so many boosters? Are we over vaccinating? Why do some vaccinated puppies contract parvo or distemper anyway?

Nomograph testing can help determine the best time to start puppy vaccinations in your litter. A nomograph is an estimate of the amount of antibody passed to a litter of pups from the mother via her colostrum. During the puppy's first hours of life, its intestinal tract can allow colostral antibody to be absorbed into the bloodstream. This passive antibody helps to protect the newborn from all the diseases that the mother is protected from. As the puppy grows up, maternal antibody breaks down in approximately 2 week "half-lives" until it is no longer present in the pup. While this antibody is at higher levels, it can neutralize viruses such as canine parvovirus and canine distemper virus. Because of this neutralization, if you vaccinate puppies in which maternal antibodies are still prevalent, the puppy vaccine can be blocked. Maternal antibody interference is one of the most common causes of vaccine failure to immunize and can result in vaccinated puppies contracting parvo or distemper. The reason that puppies are given multiple doses of vaccine is because most of the time we don't know what their maternal antibody titers are, and so don't know when the vaccine will be effective.

Nomograph Testing is best done around the same time as a dam's ultrasound (about 4 weeks after ovulation). Through the dam's blood sample, this titer test can help determine if the puppies she is carrying will be adequately protected by the antibodies they receive through nursing or if they are at risk of disease. Nomograph testing can help us understand the best timing of vaccinations to assure a litter will be effectively immunized. The results may suggest that the pups would benefit from delaying vaccinations or vaccinating less. However, even though a nomograph can confirm the antibody levels that should pass to the puppies from the dam, actual levels may be limited by the dam's ability to make colostrum and for the pups to receive it. So nomograph results should not be used as a definitive indication of protection from disease.

The University of Wisconsin School of Veterinary Medicine offers nomograph testing at a price of $44. You can find more information about their nomograph testing and how to request a test at: https://www.vetmed.wisc.edu/lab/cavids/titer-testing-details/

Reference: School of Veterinary Medicine, University of Wisconsin (2020). Cavids Titer Testing, Canine Nomograph – What is it?