

# TICK AND TICK CONTROL

## BASICS

### OVERVIEW

- Dogs and cats may be parasitized by ticks; ticks found on dogs and cats are in the families “*Ixodidae*” and “*Argasidae*”
- Ectoparasites are parasites that live on the surface of the host animal, such as on the skin
- Ticks are ectoparasites that feed only on the blood of their hosts; they are arthropods, closely related to scorpions, spiders, and mites
- Ticks can carry many disease-causing organisms that they transmit to their host animal—the disease-causing organisms include protozoa, bacteria, rickettsiae, and viruses; diseases caused by organisms carried by ticks are called “tick-borne diseases”
- Ticks may cause other health problems, including allergic reactions (hypersensitivity), paralysis, and blood-loss anemia

### SIGNALMENT/DESCRIPTION of ANIMAL

#### Species

- Dogs and cats
- Cats are thought to be quite efficient at removing ticks, but tick attachment and subsequent health problems due to infection with disease-causing organisms carried by the tick and transmitted to the cat (tick-borne diseases) are diagnosed routinely

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Attached ticks or tick feeding cavities may be seen on the skin
- Associated tick-borne diseases—numerous signs, vary with the organ system(s) affected
- Irritation caused by ticks and subsequent self-trauma (as from scratching or biting at the site of tick attachment)

### CAUSES

- Ticks—attracted to hosts by warmth, presence of carbon dioxide, physical contact, and host-associated odors

### RISK FACTORS

- All dogs and cats exposed to ticks carrying disease-causing organisms are at risk for tick attachment and transmission of infection
- Domestic animals—can be in close contact with ticks, owing to movement of ticks into suburban environments and expansion of suburban environment into surrounding forests, prairies, and coastline areas

## TREATMENT

### HEALTH CARE

- Outpatient, after removal of ticks
- Removal—do as soon as possible to limit time available for transmission of the disease-causing organism or nervous-system poison (known as a “neurotoxin”) from the tick to the dog or cat; grasp ticks close to the skin with fine-pointed tweezers and gently pull free; wash feeding cavity (area of tick attachment) with soap and water; generally sufficient to prevent local inflammation or secondary infection

## FOLLOW-UP CARE

### PREVENTIONS AND AVOIDANCE

- Avoid environments that harbor ticks; may be difficult except for pets kept strictly indoors (and in some cases, ticks will be found indoors)
- Tick control does not always equal control of tick-borne diseases; often the goal is the perceived absence of ticks on the host animal (clinical repellence)
- Pets—owners report complete tick control, even though some period of attachment and tick feeding has occurred or live ticks may spend some time crawling on the animal after the ticks have been exposed to lethal levels of an agent or chemical designed to kill ticks (known as an “acaricide”); immature ticks of some species that parasitize dogs and cats (*Amblyomma americanum* [the “lone star tick”], *Rhipicephalus sanguineus* [the “brown dog tick”] and *Ixodes scapularis* [the “black-legged” or “deer tick”]) may be undetected because of their tiny size
- Disease-causing organisms carried by ticks—may be transmitted very rapidly (viruses) or may require several hours (such as for *Rickettsia rickettsii* that causes Rocky Mountain spotted fever) or days (such as for *Anaplasma phagocytophilum* that requires one day for transmission or for *Borrelia burgdorferi* [cause of Lyme disease] that requires 1 to 2 days for transmission)

### ***Insecticides and Acaricides (chemicals to kill insects and ticks)***

- In the United States, the Environmental Protection Agency (EPA) licenses topical agents as effective against various species of pests

- Tick control is challenging because ticks are dispersed widely in the environment, spend a relatively short time on their hosts, possess great reproductive capacities, and have long lifespans
- Collars containing chemicals to kill ticks (known as “acaricidal collars,” such as Preventic® Tick Collar for Dogs, Virbac) and spot-on treatments (such as Frontline Topspot®, Merial and K9 Advantix®, Bayer)—have gained wide use; ease of application and owner compliance is as important as effectiveness—in many areas year-round tick control is required (NOTE: always read the entire label of any chemical designed to kill insects or ticks and use it only as instructed; *do not* use dog products on cats)
- Disease transmission interruption studies have been published for these products; at approximately 4 weeks after product application effectiveness in prevention of transmission of *B. burgdorferi* (organism that causes Lyme disease) to dogs was 75% to 87.5% for Frontline Topspot® and 100% for K9 Advantix®; Preventic® Tick Collar for Dogs was 100% effective at 7 days post-application

#### **POSSIBLE COMPLICATIONS**

- Tick-borne diseases or tick paralysis

#### **EXPECTED COURSE AND PROGNOSIS**

- Depends on which disease-causing organism has infected the dog or cat or if the nervous-system poison carried by the tick has affected the animal

#### **KEY POINTS**

- Removal of ticks—do as soon as possible to limit time available for transmission of the disease-causing organism or nervous-system poison (known as a “neurotoxin”) from the tick to the dog or cat; grasp ticks close to the skin with fine-pointed tweezers and gently pull free; wash feeding cavity (area of tick attachment) with soap and water; generally sufficient to prevent local inflammation or secondary infection
- Application of hot matches, Vaseline®, or other materials not only fails to cause tick detachment, but allows for longer periods of attachment and feeding
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