What Are Ticks?

Ticks are external parasites that feed on the blood of unlucky host animals such as our canine companions. Like mites and spiders, ticks are arachnids. The brown dog tick (Rhipicephalus sanguineus) and the American dog tick (Dermacentor variabilis), examples of ticks that commonly affect dogs, require three feedings to complete their life cycles.

How Are Ticks Transmitted to Dogs?

Ticks are most active in from spring through fall and live in tall brush or grass, where they may attach to dogs playing on their turf. These parasites prefer to stay close to the head, neck, feet and ear area. In severe infestations, however, they can be found anywhere on a dog's body.

How Do I Know if My Dog Has Ticks?

Ticks are visible to the naked eye. During the warmer months, it's a good idea to check your dog regularly for these parasites. If you do spot a tick, it is important to take care when removing it. Any contact with the tick's blood can potentially transmit infection to your dog or even to you! Treat the area with rubbing alcohol and pluck the parasite with tweezers, making sure you've gotten the biting head and other body parts. Since it may only take a few hours for disease to be transmitted from an attached tick, it is ideal for your dog to be evaluated by a veterinarian soon after any ticks are found.

Are Certain Dogs Prone to Ticks?

Ticks can be found all over the world. But dogs who live in warm climates and certain wooded areas of the Northeast, where ticks are particularly prominent, might be more prone due to increased exposure.

What Are Some Complications Associated with Ticks in Dogs?

- Blood loss
- Anemia
- Tick paralysis
- Skin irritation or infection

Ticks can also transmit diseases such as Lyme disease, ehrlichiosis and Rocky Mountain spotted fever, all of which can cause serious complications and are potentially fatal without prompt and proper treatment.

Lyme Borreliosis in Dogs

Lyme disease is one of the most common tick-transmitted diseases in the world. It is caused by a spirochete (bacteria) species of the *Borrelia burgdorferi* group. Dominant clinical feature in dogs is recurrent lameness due to inflammation of the joints. There may also be a lack of appetite and depression. More serious complications include damage to the kidney, and rarely heart or nervous system disease.

Kidney disease appears to be more prevalent in Labrador retrievers, golden retrievers, and Bernese Mountain dogs. Experimentally, young dogs appear to be more susceptible to Lyme disease than adult dogs. Transmission of the disease has been reported in dogs throughout the United States and Europe, but is most prevalent in the upper Midwestern states, the Atlantic seaboard, and the Pacific coastal states.

Symptoms and Types

Many dogs with Lyme disease have recurrent lameness of the limbs due to inflammation of the joints. Others, meanwhile, may develop acute lameness,

which lasts for only three to four days but recurs days to weeks later, with lameness in the same leg, or in other legs. Better known as "shifting-leg lameness," this condition is characterized by lameness in one leg, with a return to normal function, and another leg is then involved; one or more joints may be swollen and warm; a pain response is elicited by feeling the joint; responds well to antibiotic treatment.

Some dogs may also develop kidney problems. If left untreated, it may lead to glomerulonephritis, which causes inflammation and accompanying dysfunction of the kidney's glomeruli (essentially, a blood filter). Eventually, total kidney failure sets in and the dog begins to exhibit such signs as vomiting, diarrhea, lack of appetite, weight loss, increased urination and thirst, fluid buildup in the abdomen and fluid buildup in the tissues, especially the legs and under the skin.

Other symptoms associated with Lyme disease include:

- Stiff walk with an arched back
- Sensitive to touch
- Difficulty breathing
- Fever, lack of appetite, and depression may accompany inflammation of the joints
- Superficial lymph nodes close to the site of the infecting tick bite may be swollen
- Heart abnormalities are reported, but rare; they include complete heart block
- Nervous system complications (rare)

Causes

Borrelia burgdorferi, which is the bacteria responsible for Lyme disease, is transmitted by slow-feeding, hard-shelled deer ticks. However, infection typically occurs after the *Borrelia*-carrying tick has been attached to the dog for at least 18 hours.

Diagnosis

You will need to give a thorough history of your dog's health, including a background history of symptoms, and possible incidents that might have precipitated this condition. The history you provide may give your veterinarian clues as to which organs are being affected secondarily. A complete blood profile will be conducted, including a chemical blood profile, a complete blood count, and a urinalysis. Your veterinarian will use these tests to look for the presence of bacteria, parasites, and fungi in the bloodstream. Fluid from the affected joints may also be drawn for analysis.

The condition of the skin near the tick-bite site will be an important indicator of your dog's health as well, such as whether the wound is still open, or whether there are any fragments of the tick's body left in the wound.

There are many causes for arthritis, and your veterinarian will focus on differentiating arthritis initiated by Lyme disease from other inflammatory arthritic disorders, such as trauma, or osteochondrosis dissecans (a condition found in large, fast growing breeds of puppies). Immune-mediated diseases will also be considered as a possible cause of the symptoms, and an X-ray of the painful joints will allow your doctor to examine the bones for damage or disorder.

Treatment

If the diagnosis is Lyme disease, your dog will be treated as an outpatient, unless its health condition is severe. There are a number of antibiotics from which to choose. It is important that you keep your dog warm and dry, and you will need to control its activity until the clinical signs have improved. The recommended period for treatment is four weeks. Your veterinarian is unlikely to recommend dietary changes. Do not use pain medications unless they have been recommended by your veterinarian.

Unfortunately, symptoms do not always completely resolve in some animals. In fact, long-term joint pain may continue even after the bacteria has been fully eradicated from your dog's system.

Living and Management

Improvement in sudden (acute) inflammation of the joints caused by *Borrelia* should be seen within three to five days of antibiotic treatment. If there is no improvement within three to five days, your veterinarian will want to consider a different diagnosis.

Prevention

If possible, avoid allowing your dog to roam in tick-infested environments where Lyme borreliosis is common. In addition to grooming your dog daily and removing ticks by hand, your veterinarian can recommend a variety of sprays,

collars, and spot-on topical products to kill and repel ticks. Such products should only be used under a veterinarian's supervision and only according to the label's directions. In addition there are vaccines available for dogs; talk to your veterinarian about its availability and whether it is right for your dog.