In North America, the most common canine tick-borne diseases (and associated causative agents) are Lyme disease (Borrelia burgdorferi), ehrlichiosis (Ehrlichia canis, Ehrlichia ewingii, Ehrlichia chaffeensis), anaplasmosis (Anaplasma phagocytophilum, Anaplasma plannka), Rocky Mountain spotted fever (Rickettsia rickettsii), babesiosis (Babesia vogeli, Babesia gibsoni), and canine heartworm disease (Dirofilaria immitis).

Dr. Little notes that a single tick can transmit more than one pathogen, infections can include more than one tick species, and dogs can be infested with more than one pathogen. Since dogs can serve as a reservoir for human infection, people are also at risk. Dr. Little stressed the public health benefit, saying “By treating dogs for ticks, we’re not only keeping them from getting infected, but we’re also helping to limit the number of ticks around the home that create a health risk to the human family members.” Dr. Little says that comprehensive tick control remains the best way to minimize infection.

Ticks are both tenacious and pervasive – one female brown dog tick produces up to 4,000 eggs leading to thousands of tick larvae. Ticks can live and breathe outdoors all year, though activity waxes and wanes throughout the year, according to temperature. As a result, the Companion Animal Parasitic Council (www.capc.org) recommends that every dog be on tick control every month all year long, because infestations can occur year-round and infections can be fatal.

Dr. Little endorses vaccination for Lyme disease in endemic areas, including Ontario, although Vaccination gives some clients a false sense of security that their dog is now protected from ticks, while in fact there are many other ticks and diseases they can become infected with. As vaccines are not 100% effective, there is still a risk of infection. The most important part of protecting a dog, she says, is tick control, because it will protect against all infections, including Lyme disease.

Tick-borne infections on the rise

Since 2000, the number of reported cases caused by these agents has increased dramatically. Although approximately 30,000 cases of human Lyme borreliosis are reported to Center for Disease Control (CDC) annually, the agency estimates that there are actually closer to 300,000 new cases of Lyme disease in people each year. A similar increase was seen in canine seroprevalence, with antibodies to Borrelia burgdorferi in Nova Scotia, and Isabella and Hamilton counties in southern New Brunswick from 2001-2007, but 7.2% tested from 2010-2012. In fact, Lyme disease has been reported more frequently than any other tick-borne infection. The most heavily affected areas, based on reported cases, are the Maritime provinces, the United States, the Great Lakes region, and California. But, Dr. Little says the number of cases is expanding in all areas, and this is likely attributed to increasingly warmer, wetter climates. According to Google Trends, online searches for “Lyme disease” in the United States peak seasonally in June and October, which coincide with the appearance of nymphal ticks and adult ticks, respectively. Indeed, the presence and activity of adult ticks increases in October through March, a time when people may stop treating their dogs due to a belief that ticks are no longer a threat as temperatures decline.

Tick diversity

Evidence shows that many species of ticks are expanding throughout North America. For example, Ixodes scapularis (Deer tick) has established populations in parts of southeastern and central Manitoba, southern and eastern Ontario, and southwestern Quebec. Isolated populations are found in southern New Brunswick and along the south shore in New Scotia (including Pictou county). New populations of Ixodes scapularis (the Blacklegged tick) have been identified in British Columbia, Washington, Oregon, Idaho, Montana, Minnesota, Vermont, New York, and Maine. The Blacklegged (or Deer) tick’s geographic range is expanding in all areas, and this is likely attributed to increasingly warm, wetter climates. According to Google Trends, online searches for “Lyme disease” in the United States peak seasonally in June and October, which coincide with the appearance of nymphal ticks and adult ticks, respectively. Indeed, the presence and activity of adult ticks increases in October through March, a time when people may stop treating their dogs due to a belief that ticks are no longer a threat as temperatures decline.

Tick control measures

Dr. Little emphasizes the round-out use of tick control agents in hyper-endemic areas is the best way to prevent infection. Even in the winter there are times when conditions will be ripe for ticks to be present.

In endemic areas, the most common canine tick-borne diseases are the Rocky Mountain Wood Tick (Dermacentor variabilis), the Brown Dog Tick (Rhipicephalus sanguineus), the Deer tick (Ixodes scapularis) and the Rocky Mountain Wood Tick (Dermacentor variabilis). Though small numbers of this species can be occasionally found from Manitoba to Newfoundland.