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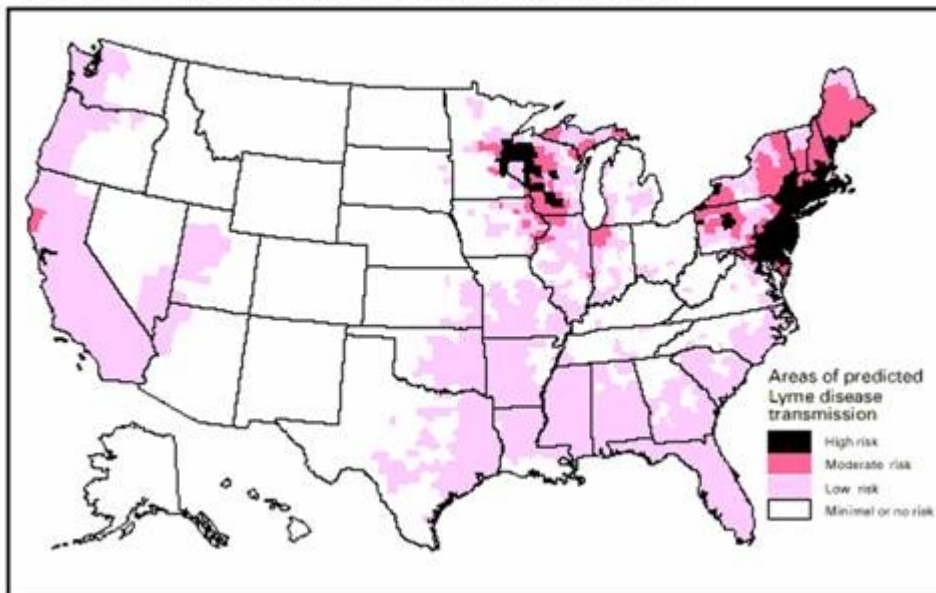
The following article was written prior to the 2005 National Specialty, and a more current, interactive map showing the spread of Lyme disease cases in humans is available on the CDC website at <http://www.cdc.gov/lyme/stats/maps/interactiveMaps.html>. A similar map of Lyme, heartworm, and internal parasites in dogs is at <http://www.cpcvet.org/parasite-prevalence-maps/>

Protecting yourself and your Golden from fleas and ticks: An increasing concern for the traveling Golden?

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An increasing number of diseases of dogs and their owners are classified as vector-borne diseases. This means that an insect or arthropod (such as a tick) carries the disease to the dog and/or the owner. The prevalence of these diseases varies dramatically in different geographic regions. One of the best known of these diseases, Lyme disease, is a disease cause by the bacterium, *BORRELIA BURGDORFERI*, but usually transmitted by *IXODES SPP.* ticks (CDC, online). The risk of Lyme disease is strikingly different in areas which may be separated by only a couple of hours driving or flying time. Importantly, Maryland and Eastern Pennsylvania are areas with a high risk of Lyme disease and **THE 2005 GRCA NATIONAL SPECIALTY WILL BE HELD IN GETTYSBURG, PA, WITHIN THIS HIGH RISK AREA.** Preventing infection from Lyme disease and other tick-borne diseases is important when showing dogs or taking an outdoor vacation with your dog in areas where infection is common. Tick prevention for your dog and for yourself should be discussed with your dog's veterinarian and your physician before the trip. Although Lyme disease distribution may vary in different years, the following Map shows the approximate distribution of Lyme disease in humans in different parts of the United States and is reprinted from the Centers for Disease Control and Prevention Lyme Disease website, at <http://www.cdc.gov/ncidod/dvbid/lyme/>.

National Lyme disease risk map with four categories of risk



For example, I live in Morgantown, WV. While at home and living as couch potatoes, our Golden Retrievers are not normally treated with any flea or tick preventative, do not have fleas or ticks, and if they were to get a tick in our geographic region, they should have minimal risk of getting Lyme disease. However, we use a commercial, highly-effective absorbed (drop-on) tick and flea killing product when our dogs travel to shows only a few hours from our house where the risk of Lyme disease is high. The use of such treatments has been shown to prevent or reduce infections from several vector-borne diseases in dogs (Davoust ET AL., 2003; Spencer ET AL., 2003).

Lyme disease can be a devastating disease. Dogs can get arthritis from Lyme disease. In addition, there is a fatal form of kidney failure that can result from Lyme disease infection in dogs. Golden Retrievers and Labrador Retrievers are at increased risk of developing kidney failure associated with Lyme disease (Dambach et al., 1997).

A shocking percentage of ticks are infected with agents that cause diseases in dogs and their owners. In a recent study in New Jersey, 33.5% were infected with *BORRELIA BURGDORFERI* (Lyme disease) and 34.5% were infected with *BARTONELLA SPP* (Adelson ET AL., 2004). In a previous study, 49.3% of adult *IXODES SCAPULARIS* ticks from New Jersey were infected with *BORRELIA BURGDORFERI* (Schulze et al., 2003). In a survey of ticks from New Jersey, New York, Rhode Island and Connecticut; 25% of adult ticks and 20.7% of nymphal ticks were infected with *BORRELIA BURGDORFERI*, and the average number of *BORRELIA* organisms per tick was 5,351 and 1,964 for adult and nymphal ticks respectively (Wang et al., 2003). Tick infection and exposure tends to correlate with Lyme disease infections in both dogs and humans. For example, in Wisconsin, where up to 40% of dogs in some counties had evidence of Lyme Disease infection – tick exposure was associated with infection while Lyme disease vaccination was associated with decreased infection risk (Guerra et al., 2001).

Ticks also can transmit a number of diseases in addition to Lyme disease. For example, Rocky Mountain Spotted Fever is a potentially fatal disease carried by ticks to both dogs and humans (CDC, online). Despite the name, Rocky Mountain Spotted Fever occurs in many regions of the United States and infections appear to be common in U.S. children (Marshall ET AL., 2003). In a recent study of sick dogs whose blood was submitted to North Carolina State University, 27.2% had evidence of exposure to *BARTONELLA HENSELAE* (Cat Scratch Fever – which can be transmitted by fleas or ticks), 29.7% had evidence of exposure to *RICKETTSIA RICKETTSII* (Rocky Mountain Spotted Fever), 6.5% had evidence of exposure to *EHRlichia CANIS* (canine ehrlichiosis), 4.7% had evidence of exposure to *BARTONELLA VINSONII SUBSPECIES BERKHOFfII*, and mixed exposures were common (Solano-Gallego ET AL., 2004). However, dogs in North Carolina were less likely to show evidence of exposure to *BORELLIA BURGORFERI* than in many other mid-Atlantic states (Duncan et al., 2004). A survey of dogs in Rhode Island veterinary hospitals and animal shelters demonstrated that infections and co-infections with tick-borne pathogens were common: 52% had evidence of exposure to *BORELLIA BURGORFERI*, 21.3% had evidence of exposure to *RICKETTSIA RICKETTSII*, 14.4% had evidence of exposure to the agent that causes human granulocytic ehrlichiosis, 2.9% had evidence of exposure to *EHRlichia CANIS*, and 2.2% had evidence of infection with *BARTONELLA VINSONII* (Hinrichson ET AL., 2001).

When we, as dog lovers, travel to conformation and performance shows, tracking events, field events, or just take a nice outdoor vacation with our dogs, we often enter areas where the spectrum of tick-borne diseases are different than in our home counties. We don't just go to the dog events either, since many of us play with and walk our dogs in unfamiliar areas while pursuing our hobby. Ticks are highly

unlikely in freezing winter weather in the north but a quick spell of warm weather, can be unpredictable and cause a re-emergence of nymphal ticks (highly effective disease transmitters and difficult to detect). With the spectrum of diseases that may be out there, flea and tick prevention is essential for our dogs and for each of us, particularly when we are in unfamiliar territory. Importantly, in the Golden Retriever Club of America Breed Health Survey (Glickman ET AL., 1998-1999), the use of flea and tick drops, flea and tick shampoos, or flea and tick sprays was associated with a statistically significant REDUCED RISK for lymphosarcoma. In addition, the use of flea and tick drops was associated with a statistically significant REDUCED RISK for hemangiosarcoma. Thus, the health survey did not indicate any adverse effects from the use of the preventatives and actually suggested a health benefit. Importantly, counterfeit drop-on flea and tick prevention products have been distributed in the past year and a veterinarian appears to be the most reliable source of the true product (JAVMA News, 2004). For owners, recommendations for tick-prevention from the CDC website include avoiding moist shaded areas, wearing light colored clothing with long pants tucked into boots and long-sleeved shirts, using tick repellants containing DEET, frequently examining yourself for ticks and removing them promptly, and sometimes taking antibiotics if ticks are discovered or early symptoms of a tick-borne diseases occur (CDC, online). For each of us, a discussion with our dogs' veterinarian and our physician may allow us to have a safer time while we all enjoy outdoor sports with our dogs.

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