

**Dear Dr. Wise:** Should we vaccinate our dog for Lyme disease?

Lyme disease is an infectious tick-borne disease caused by the bacteria *Borrelia burgdorferi*. The bacterium is spread by the *Ixodes* species of ticks, specifically *Ixodes scapularis*, which is also known as the common deer tick, and *Ixodes pacificus*. Although Lyme disease has been diagnosed in all 50 states, it is thought that there are areas that are more endemic for the disease. *I. scapularis* is found in the Midwest and northeast, whereas *I. pacificus* is found mostly in the western coastal states.

For a tick to transmit *B. burgdorferi* it must be attached to the host for about 48 hours. Once a dog is infected with *B. burgdorferi*, the only way it can transmit the disease to other members of the household is by being a reservoir of the infective tick. The most common clinical signs seen in infected dogs are fever, lameness, joint swelling, swollen lymph nodes, lethargy, and loss of appetite.

The best way to prevent your dog from becoming infected with *B. burgdorferi* is through tick prevention and vaccination. Tick control is probably the most important thing you can do for your dog in order to prevent him or her from becoming infected, and avoiding areas of high tick infestations during periods when ticks are active is one of the best ways of control. You can also use insecticides that repel ticks on your dog, including products that contain permethrin (dogs only!), fipronil, or Amitraz.

Vaccinations for Lyme disease are available, but the efficacy is unknown and many veterinarians do not recommend their use. Even though animals that are vaccinated are less likely to contract this disease, some vaccinated animals still contract the disease regardless of their vaccination. The current recommendation is that only dogs that are exposed to ticks in areas where Lyme disease is a problem should be vaccinated. As a reminder, those areas would include the Midwest, northeast, and western coastal states. If you choose to vaccinate your dog, vaccines can be started once your dog is 12 weeks of age, two doses should be given three weeks apart, and the vaccination should be boosted yearly after that.

Therefore, if you are in one of the listed endemic areas for Lyme disease, vaccination may be a helpful tool to prevent your dog from contracting the disease. Although vaccination seems like the primary route to follow, tick control and prevention is really the best way to prevent this disease.