

## Leptospirosis Vaccine Update

The word “lepto” will often bring a feeling of dread when mentioned during a discussion about a dog’s health, it is also a term that can trigger a lively debate when mentioned during a discussion of canine vaccines. But what is Leptospirosis and how can we protect our dogs? Leptospirosis, or “lepto” as it is often referred to, is a disease caused by infection with numerous different serovars of bacteria in the genus *Leptospira* (serovars refer to closely related microorganisms distinguished by a characteristic set of antigens). Lepto is a zoonotic disease, affecting humans and animals, which is spread through urine-contaminated water, such as stagnant puddles and ponds frequented by infected wildlife and farm animals including cattle, pigs, horses, sheep, goats, rats, and raccoons. It is currently one of the most common zoonotic diseases that can be transmitted from animals to people. Left untreated, Leptosporosis can be fatal. It is responsive to antibiotics and complete recovery is possible, but some dogs that survive may be left with chronic kidney or liver disease.

Animals with lepto shed live bacteria in their urine contaminating water sources and soil. The lepto bacteria can survive in wet environments for weeks or months. Dogs typically become infected when their mucous membranes (as in the mouth, nose, or eyes) or skin wounds (like cuts or scrapes) are exposed to urine or urine-contaminated water or soil. Infection can also be spread through urine-contaminated food or bedding.

Exposure to or drinking from slow-moving or stagnant water sources, like ponds, rivers, lakes, or streams, roaming on rural properties (because of exposure to potentially infected wildlife or farm animals or urine-contaminated water sources), exposure to wild animals (especially rodents) or farm animals, even if in the backyard, and contact with other dogs (such as in urban areas, dog parks, or boarding or training facilities).

According to the American Veterinary Medical Association (AVMA), as recently as March 2024 “Leptospirosis is most commonly seen in the fall in the Northeast, wintertime or early spring in California, and year-round in the South. Notwithstanding where a dog lives, the updated document says, “All dogs are at risk of leptospirosis, regardless of signalment, geographic location, lifestyle, and the time of year.” Small breed dogs and dogs that live in urban environments may at first seem to have a lower risk but are in fact the most frequent patients in veterinary hospitals that are diagnosed with leptospirosis.

The lepto vaccine was thought to cause severe reactions in dogs and many breeders doubted its efficacy because there are over 200 Leptosporosis serovars and the vaccine protects against only 4; however, those 4 are the most common found in dogs and according to the recent report by the AKC, cross-protection for other serovars has been documented. For many years, the vaccine for Leptospirosis was avoided by many Norwich Terrier breeders as demonstrated in a survey done by the Norwich Terrier Club of America in 2017 where 65% of respondents said they would discourage puppy buyers from vaccinating for Leptosporosis. At that time, the lepto vaccine was considered “optional,” but after years of research by the American College of Veterinary Internal Medicine (ACVIM) the vaccine for Leptosporosis is now listed as a “core” vaccine. Core

vaccines are considered vital and are based on the risk of exposure, severity of disease, or transmissibility to humans.

There has been a great deal of research in the 7 years since that NTCA survey and leaders in veterinary infectious disease now encourage breeders and dog owners to reconsider the vaccine for lepto. The ACVIM recently published an update to the 2010 consensus statement on Leptosporosis in dogs which incorporates over 10 years of research and offers more insight into preventing, treating and diagnosing this zoonotic disease.

The ACVIM updated consensus statement, which was published in the October 2023 issue of the *Journal of Veterinary Internal Medicine*, recommends the lepto vaccine should be administered annually to all dogs starting at 12 weeks of age. In the updated statement the authors state, “Leptospirosis vaccines have similar immunological adverse effects as do other parentally administered vaccines. Patient factors such as breed and size can influence the risk of vaccine-associated adverse events, regardless of the antigen source. Research approximately 2 decades ago indicated that some vaccines for dogs that included a *Leptospira* component contained high concentrations of bovine serum albumin, which could account for post-vaccinal IgE-based adverse events. More recent research indicates protein content, concentrations, and severe adverse event rates are not higher for leptospirosis vaccines than distemper-parvovirus or rabies vaccines.” (here is a direct link to the ACVIM article [onlinelibrary.wiley.com/doi/10.1111/jvim.16903](https://onlinelibrary.wiley.com/doi/10.1111/jvim.16903)) Currently, bacterin vaccines containing serovars Icterohaemorrhagiae, Canicola, Grippotyphosa, and Pomona are available in North America for prevention of leptospirosis in dogs.

The American Kennel Club (AKC) reported in July 2024 that Leptosporosis will now be included in the updated list of core vaccines as recommended by the (ACVIM). You may read the full AKC announcement at <https://www.akc.org/expert-advice/dog-breeding/announcing-updated-canine-core-vaccine-recommendations-leptospirosis-now-included/>.

Although there is nothing to guarantee 100% protection from Leptosporosis, there are ways for pet owners and breeders to help their dogs remain healthy. The lepto vaccine is now considered a core vaccine that will help to protect dogs from infection. ACVIM recommends the 4-serovar vaccine be used where available. The updated list of core vaccines includes:

1. Canine Distemper Virus (CDV)
2. Canine Adenovirus-2 (CAV-2)
3. Canine Parvovirus (CPV)
4. Rabies Virus
5. Leptospirosis

To further protect our dogs' areas with stagnant water particularly in places where there may be wildlife that may carry lepto such as raccoons and rodents should be avoided.

The information contained in this article is not intended to replace the guidance and recommendations of your veterinarian, it is offered to aid in making an informed decision. As with any decision about our dog's health, leptospirosis and vaccination protocols require weighing the risk of an adverse reaction against the risk of the individual dog becoming ill or even dying from the disease or procedure being considered.

*Note: Consensus Statements of the American College of Veterinary Internal Medicine (ACVIM) provide the veterinary community with up-to-date information on the pathophysiology, diagnosis, and treatment of clinically important animal diseases. The ACVIM Board of Regents oversees selection of relevant topics, identification of panel members with the expertise to draft the statements, and other aspects of assuring the integrity of the process. The statements are derived from evidence-based medicine whenever possible, and the panel offers interpretive comments when such evidence is inadequate or contradictory.*

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