**Leptospirosis**

**By Dr. Becker**

Canine leptospirosis, "lepto" for short, is an infection caused by at least four species of Leptospira bacteria, or serovars. We know there are actually over 20 different serovars in existence that could potentially infect dogs and hundreds of non-pathogenic serovars.

Leptospira are found in both domesticated and wild animals, and the main carriers of the bacteria are rats, pigs, raccoons, cattle, foxes, skunks and opossums.

**More Cases of Leptospirosis are Being Reported**

In recent years there has been an increase in canine lepto cases, probably due to better diagnostic testing methods and not necessarily because more infections are occurring.

It's important to understand that while leptospirosis is not a new disease, the number of cases being reported is likely increasing because humans are encroaching more and more into natural habitats – which means family pets are coming in contact with wildlife known to harbor the bacteria. In addition, we also have better diagnostics these days with which to diagnose the disease.

**How the Bacteria is Transmitted**

Leptospira bacteria are transmitted through urine that contaminates water sources and can remain infectious in soil for up to six months. Dogs pick up the bacteria through a cut or break in the skin when they come in contact with contaminated water or soil, or when they drink contaminated water.

Dogs most at risk for leptospirosis are those that spend a lot of time in the water or in areas that get rain or snow runoff, as well as dogs that drink from puddles or ponds.

**Symptoms of Leptospirosis**

Many dogs with mild lepto infections never show any symptoms at all. Generally speaking, young dogs tend to get sicker than older dogs.

Clinical signs depend on the age and health of the dog, environmental factors affecting the bacteria, and the virulence of the particular species (serovar) of bacteria that is present.

When symptoms do occur, they usually appear between 4 and 12 days after exposure to the bacteria, and can include fever, muscle pain, vomiting and diarrhea, loss of appetite, lethargy, depression, and blood in the urine.

A lepto infection primarily affects the kidneys and liver, so in serious cases, there can be jaundice, which is a yellowing of the skin and mucous membranes. In dogs, it is usually most obvious in the whites of the eyes. Jaundice indicates the presence of hepatitis (liver inflammation) as a result of the destruction of liver cells by the bacteria.

Blood clotting problems can also develop, which can result in blood in the stool and bleeding from the tissues of the mouth. In rare cases, leptospirosis can also cause respiratory distress and acute pulmonary (lung) hemorrhage.

**Treating Leptospirosis**

Some dogs exposed to lepto recover without medical treatment because they never show overt symptoms. Unfortunately, an untreated dog who recovers from the infection can become a carrier and shed the bacteria in urine for up to a year. The risk here is that lepto can be zoonotic – meaning humans who come in contact with infected dog urine are at risk of acquiring the infection.

In most cases, a lepto infection causes symptoms, and hopefully, those symptoms will prompt the dog's owner to get him to a veterinarian. Dogs that become seriously ill with leptospirosis must be hospitalized to receive antibiotics and appropriate supportive care to control vomiting and diarrhea, and to provide hydration and nutrition.

Dogs with milder infections can be managed at home as long as the owner takes appropriate hygiene precautions when cleaning up urine. If your dog has lepto and anyone in your family develops flu-like symptoms, it's important that you inform your family physician that a leptospirosis infection is a possibility.

**Minimizing Your Pet's Risk of Infection … and When to Call the Vet**

Leptospira bacteria love warm humid climates and are often found in stagnant water. As I mentioned earlier, wild animals can also harbor the bacteria, so dogs exposed to potentially contaminated water sources or wild animals are at much greater risk of developing an infection than city dogs. Infection is most common in the summer months, the early fall, and during periods of flooding.

At home you can reduce the risk of infection by safely controlling the rodent population in and around your home. If you happen to live where lepto infections are very common, it's important to keep your pet away from ponds, slow moving water, and standing or stagnant water.

That being said, I have a warm, stagnant cesspool of a pond that wildlife love to come and visit, and my dogs love to swim in every day during the summer. I'm pretty sure my own pack has been exposed to lepto bacteria, but because I keep their immune systems healthy and stay very alert for any symptoms of infection, I'm not overly concerned. This is also the advice I give to my clients.

If you have a very healthy dog who suddenly has a fever, grows lethargic, perhaps is urinating excessively or is urinating bright fresh blood, you need to call your veterinarian immediately and get your pet in for a lepto test. Leptospirosis is a totally treatable bacterial infection -- it's only when a diagnosis isn't made early enough that dogs suffer unnecessarily.

**Should You Vaccinate Against Leptospirosis?**

There is a vaccine for leptospirosis, but I absolutely don't recommend it and I don't offer it at my clinic. It's a relatively weak bacterial vaccine that is short acting and can't protect against all 20 serovars of the Leptospira bacteria. In fact, it's actually ineffective for the current serovar that's causing the majority of infections in my area close to Chicago.

The leptospirosis vaccine is a bacterin -- a vaccine made from killed bacteria, which in and of itself won't prompt an immune response to make antibodies, so a powerful adjuvant is added that elicits a strong immune system response. Because of this, it also carries a significantly greater risk for adverse reactions. Information has recently emerged that the vaccine can actually cause the disease in dogs, and it has also been linked to early kidney failure in older animals.

I feel that because my profession is testing for this ancient endemic infection more frequently, we're finding more positive animals. As a result, we're fostering a tremendous amount of fear and anxiety in pet owners over a bacterium that is far from a "new risk" for dogs. In fact, it's been in the environment since the beginning of time. And dogs who don't live in rural areas have little risk of exposure.

Unfortunately, many vets are still promoting repeated vaccinations for all pets, despite the significant risks. As I mentioned earlier, a leptospirosis infection is entirely treatable. So, my question is, why vaccinate for something that's one hundred percent treatable? I've handled about a dozen cases of lepto in my career and have never had a dog experience any lingering problems from the infection. I recommend you skip the leptospirosis vaccine.

If you live in an endemic area like I do, make sure your dog's immune system is strong, and you can certainly go the extra mile by taking precautions to ensure your pet doesn't have an opportunity to be exposed to lepto bacteria.

Now, if you're like me, you let your dog live a free and happy existence playing in every pond he finds, or in mucky creeks, and simply recognize that it's your job as a pet owner to stay alert for signs of infection. Certainly, if your pet begins exhibiting symptoms of an infection, you'll want to promptly address those symptoms with the help of your vet.