

# Leptospirosis in Dogs

## Leptospirosis

Leptospirosis is a bacterial disease which can affect many animals. It is rare in cats, but more common in dogs. Leptospirosis is a [zoonotic disease](#), meaning it can be passed from animals to humans.

## Cause

Leptospirosis is caused by a complex group of closely related bacteria of the genus *Leptospira*. There are several strains that occur in different locations and tend to affect certain species more than others.

***Leptospira canicola*** and ***icterohemorrhagiae*** were considered the most prevalent serovars infect dogs. And also serovar ***grippotyphosa*** and **Pomona** as a causative agent of canine leptospirosis

## Risk Factors

*Leptospira* bacteria survive especially well in warm, humid areas, and are often found in stagnant water (e.g. ponds). Wild animals can carry *Leptospira*.

Therefore, dogs with a higher potential for exposure to contaminated water and wild animals and their urine are at a greater risk (e.g., living in rural areas, hunting dogs).

Adult dogs, males, and large breed dogs appear to have a higher rate of infection. However, *any* dog can be exposed, since urban wildlife such as rodents may carry the bacteria. Most infections happen in the summer and early fall, and outbreaks sometimes follow flooding.

*Leptospira* bacteria are shed in the urine of infected animals, though they can be found in other body fluids and tissues. Dogs can become infected by exposure to contaminated water (both through ingestion or contact with mucous membranes or broken skin), exposure to urine from an infected animal (e.g. contaminated

food, bedding, soil, etc.), bite wounds, and ingestion of tissues from infected animals.

Once *Leptospira* bacteria get into the body, they spread to many types of tissues. The immune system may clear the bacteria from most of the body, but the bacteria may "hide out" in the kidneys, and the bacteria can be shed in the urine for many months after infection. Treatment with antibiotics may help prevent long term shedding in the urine.

### **Signs and Symptoms of Leptospirosis**

The severity of symptoms varies, and depends on the dog (age, immune response, vaccination status), the strain of *Leptospira*, and other factors. Some dogs may have mild symptoms or no symptoms at all, but severe cases can be fatal. Signs and symptoms may include:

- fever
- joint or muscle pain - this may manifest as a reluctance to move
- decreased appetite
- weakness
- vomiting and diarrhea
- discharge from nose and eyes
- frequent urination - may be followed by lack of urination
- yellowing of the gums, membranes around the eyes, and skin ([jaundice](#))

### **Diagnosis of Leptospirosis**

A definitive diagnosis is usually made by demonstrating the presence of the bacteria in samples, usually urine, or finding increasing levels of antibodies to *Leptospira* over time, which shows an active immune response through a test called MAT. A single antibody test may be positive due to past exposure to *Leptospira* bacteria (e.g. an infection with no symptoms) or vaccination.

It is also important to note that *Leptospira* bacteria can be found in the urine of dogs that may not have active symptoms due to the *Leptospira*, so it is important to clarify if the symptoms are due to Leptospirosis or other possible causes. A variety of other laboratory tests and radiographs can help confirm the diagnosis.

## **Treating Leptospirosis**

Antibiotics are used to kill *Leptospira* bacteria and are often given in two stages: one type of antibiotic to treat the initial infection, followed up with a different kind of antibiotic to combat the shedding of bacteria in the urine. The earlier treatment is started, the better.

Once kidney and/or liver failure is present, the prognosis for recovery is worse. In these cases, aggressive treatment is vital, including intravenous fluids, medications to reduce vomiting and treat other effects of kidney and liver failure, and dialysis. However, depending on the severity of disease, treatment is not always successful when organ failure is present.

## **Preventing Leptospirosis**

Vaccines against leptospirosis are available and recommended in areas where leptospirosis is common. The vaccines are only produced for a few specific varieties of *Leptospira*, and don't offer long-lasting immunity, so need to be repeated often.

Although the vaccines are not 100 percent effective and do not protect against all types of *Leptospira*, vaccination is still recommended to help prevent a potentially serious disease that can be transmitted to people.

Rodent control measures reduce the chances of infection, and in areas where Leptospirosis is common, preventing dogs from swimming in ponds and slow-moving water can also help.

## **Home Care for a Pet with Leptospirosis**

Leptospirosis can cause flu-like symptoms in people, which in some cases can progress to serious illness. If your pet has been diagnosed with Leptospirosis, the risks can be managed, primarily with careful hygiene. In reality, pets that do not show signs of infection (and therefore are not diagnosed and treated with antibiotics to stop the shedding of bacteria in the urine) probably pose a greater risk for transmission to unsuspecting owners.

However, if your pet has been diagnosed with Leptospirosis, steps to prevent infections include the following:

Avoid contact with urine if possible, and wear protective clothing (gloves, etc.) if you need to handle urine.

Practice good hygiene including careful hand washing.

Disinfect surfaces where infected pets have urinated (antibacterial disinfectant or diluted bleach solution).

Follow your vet's advice for treatment and make sure all medications are given as directed.

If any people in contact with a dog diagnosed with Leptospirosis become ill, be sure to mention the dog's illness to health care providers (as a rule of thumb, it is always a good idea to mention pet exposure to health care providers when people in the family are ill).