

Leptospirosis

Information for Dog Owners



Key Facts

- Signs of disease can be:
 - Subtle, e.g. eating less, lethargy or acting 'off', occasional vomiting
 - Severe, such as with kidney or liver failure, e.g. abrupt increase in drinking and urinating, severe weakness, not eating, vomiting
- Speak to your veterinarian if your dog is acting unwell OR your dog has been (or will be in) an area that is considered higher risk for leptospirosis.
- Treatment needs to be started ASAP if leptospirosis is suspected.
- Vaccines are available to help protect your dog.
- People can get leptospirosis from contact with infected urine – protect yourself by knowing the risks and how to decrease them.

What is it?

Leptospirosis is caused by infection with the bacteria *Leptospira interrogans*. Veterinarians most often discover (diagnose) infection after owners bring their dog to be examined because they have a sudden increase in drinking or urinating or are very sick (e.g. not eating, vomiting, not wanting to run or play). These signs usually occur when leptospirosis has caused sudden (and frequently severe) kidney or liver disease.

Over recent years, there seems to be an increase in the number of dogs in North America being diagnosed with leptospirosis. There also appear to be specific 'hot spots' of leptospirosis infection across the U.S.A. and Canada. These are regions where dogs are more likely to be exposed to the bacteria and get sick. There are 8 different types (serovars) of the bacteria that are responsible for most leptospirosis disease in dogs. Different serovars of *Leptospira* spp. are present in different geographic areas.

Who gets it?

Dogs, rodents, livestock, people and cats can all be infected with *Leptospira* bacteria; however, signs of disease are rare in cats.

Wildlife (e.g. raccoons, skunks, rats, mice, opossums) can be infected (without being sick) and can spread the bacteria into the environment through their urine.

Can people get sick with leptospirosis?

Yes- People can be infected the same way as dogs, from contact with contaminated urine or water. Although rare, infected dogs can infect people. There is higher risk of disease for people who work with sick dogs (e.g. veterinarians, veterinary clinic staff). Anyone who is bitten by, has blood exposure to (e.g. needle-stick injury) or contact with urine from an infected dog should contact their health care provider immediately.

Human disease outbreaks have occurred, most often following athletic competitions by swimming in contaminated water.



How is it spread?

(Transmission & Infection risk)

Leptospirosis is usually spread (transmitted) to a dog, cat or human after they have contact with an infected animal's urine and it enters their body through open cuts, scrapes and skin wounds or splashes onto their mucous membranes (e.g. eyes, open mouth). Infection is also spread by contact with items contaminated with infected urine (e.g. water bowls, shared bedding/blankets, food, soil). Sometimes infection can occur after an animal bite or due to eating infected tissue (e.g. animal carcass).

Leptospira can survive in the environment for many months. The bacteria are frequently found in wet environments and stagnant water sources (e.g. lakes, ponds, rivers and puddles). Outbreaks and increased risk of disease can occur after heavy rains or flooding.



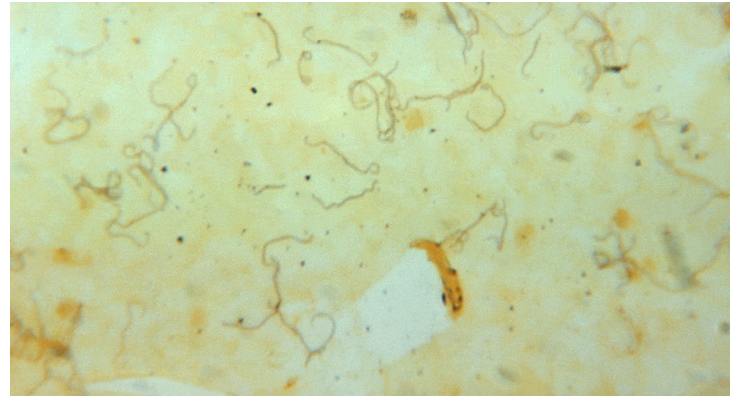
What should I look for?

(Signs of Disease)

Many dogs show no obvious signs of disease or very subtle (mild) signs (e.g. acting a bit 'off', occasional vomiting or tired). Other signs include weakness, polyuria (increased urination), polydipsia (increased drinking), vomiting, not eating/reduced appetite, and muscle tenderness. Sometimes changes with breathing can occur (e.g. difficulty breathing, excessive panting, trouble breathing while exercising). Petechiae ('pin point' bleeding seen along the gums or exposed skin), nose bleeds, blood in stool, jaundice, muscle pain related signs of stiffness and disorientation may also be noted.

How is it diagnosed?

Your veterinarian will diagnose leptospirosis based on time spent in suspected high-risk areas, examining your dog and performing blood and urine tests that show acute kidney or liver disease.



Liver sample from a fatal case of leptospirosis reveals the presence of numerous, corkscrew-shaped, *Leptospira* sp. bacteria (public domain, Centers for Disease Control and Prevention).

Specific blood and urine tests will be performed to help confirm leptospirosis. Sometimes the results of these tests can be difficult to interpret, particularly if your dog has been previously vaccinated for leptospirosis or is on (or recently received) antibiotics. It's important to let your veterinary clinic know if any of these have occurred.

Leptospirosis should be considered for any dog who lives in (or has travelled to) an area that is higher risk, has sudden disease signs and blood and urine test results with kidney and/or liver changes and a low platelet count.

What is the treatment? Will my dog recover?

Beginning the correct antibiotics quickly is the best treatment for dogs with leptospirosis. Your veterinarian will also advise care for kidney or liver disease. Most dogs will require hospitalization, intravenous fluids, anti-nausea medications and careful monitoring. Some dogs will need advanced care at an intensive care facility, particularly if they need dialysis, transfusion and oxygen support.

Whether your dog improves will depend on:

- 1) how quickly he/she is diagnosed and treated,
- 2) response to treatment, and
- 3) in severe illness whether referral for dialyses and intensive care is an option.

How can I stop this from happening to my dog and other dogs?

Be informed. Knowing which areas have leptospirosis or are at higher risk will enable you (and your dog) to avoid them. Slow moving water, puddles or areas known to have high populations of rodents or raccoons are higher risk for leptospirosis. Other dogs that live in the same household/kennel where one dog has been diagnosed with leptospirosis may need treatment. It is important to let your veterinarian know about your other dogs – and other pets.

Vaccinate your dog(s) if you live in an area known to have leptospirosis or if your dog is at higher risk. This can include dogs spending time in higher risk areas (e.g. field trial, hunting, traveling to regions known to have had an outbreak (human or canine) or with a high level of dog to dog contact). Current vaccines prevent four of the eight common serovars causing disease in dogs and serve as an important component to protecting dogs. Recent studies indicate current leptospirosis vaccines are safe and effective and are strongly encouraged for dogs at risk for disease.

Outbreak Management

Dogs suspected or known to have leptospirosis should immediately be isolated (kept separated from other dogs) to prevent risk of infection to other dogs and people. When numerous dogs in a group or event become infected, it is recommended to immediately contact someone with experience in veterinary infectious disease risk assessment and outbreak management. This will help control the further spread of infection, particularly with larger dog group events and facilities such as kennels that house groups of dogs.

Zoonotic (Human Infection) Alert

If you are around infected dogs take precautions. These include ensuring others know that a dog has (or is suspected to have) leptospirosis (i.e. place sign on cage), wearing disposable gloves and gown (wash hands after removal) and avoiding skin contact with contaminated urine or bedding. It is also important that infected dogs only urinate in areas away from other patients and where there is low human and canine traffic.

Avoid contact with infected urine. If your dog is diagnosed with leptospirosis you should not have contact with their urine, particularly for the first 72 hours after appropriate antibiotics have been started. Contact your healthcare provider if your dog is diagnosed with leptospirosis - the same source that infected your dog could put you and other household members at risk for disease.



Additional Resources:

Day, M. J., et al. (2016), WSAVA Guidelines for the vaccination of dogs and cats. *J Small Anim Pract*, 57: E1–E45.

Schuller, S., et al. (2015), European consensus statement on leptospirosis in dogs and cats. *J Small Anim Pract*, 56: 159–179.

Stull, JW, et al. (2016), Disease prevention at canine group settings. Available at: vet.osu.edu/preventive-medicine/vpm-research/disease-prevention-canine-group-settings

Sykes, J.E., et al. (2011), 2010 ACVIM Small animal consensus statement on leptospirosis: Diagnosis, epidemiology, treatment, and prevention. *J Vet Intern Med*, 25: 1–13.

Created by:

Michelle Evason, BSc DVM DACVIM
(Small animal internal medicine)

Jason Stull, VMD MPVM PhD DACVPM

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