



Leptospirosis

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What is Leptospirosis?

Leptospirosis is a potential serious illness caused by the bacteria *Leptospira*, which can affect both people and animals. The *Leptospira* bacteria are present worldwide, with more than 200 known serovars (strains) infecting mammals. These bacteria are carried in the urine of infected animals such as rodents, pigs, cattle, dogs and many wildlife species. If urine from an infected animal is deposited or drains into a body of fresh water (lake, river, stream, etc.) or soil, the bacteria can survive there for weeks to months, according to the Center for Disease Control.

People and animals are usually infected with these bacteria from drinking or swimming in contaminated water or direct contact with fluids or tissues of infected animals.

Where Can it Be Found?

Leptospirosis is more common in areas with warm climates and high annual rainfall, but it can occur anywhere. Slow moving and stagnant water can harbor the bacteria. It can also be contracted from wet, shaded grass or along banks of rivers and lakes.

What Animals Are at Risk?

Dogs are most commonly affected. This disease is rare in cats. It has been reported in cattle and horses in the U.S.

Common risk factors for leptospirosis in dog's residing in the U.S. include:

- Exposure to or drinking from rivers, lakes or streams
- Roaming on rural properties because of exposure to potentially infected wildlife, farm animals or water sources
- Exposure to wild animal or farm animal species, even if in the backyard
- Contact with rodents or other dogs (such as in urban dog parks)

Are People at Risk?

Not only can this disease be spread from animals to people, but people may be exposed in their environment through soil and water as mentioned above. Infection can cause flu-like symptoms and can cause liver and kidney disease. In the U.S., most cases of human leptospirosis result from recreational

activities involving water. Infection resulting from contact with a pet, wild animal or livestock is much less common, but it is possible.

Transmission

Leptospirosis is spread through contact with water, soil, vegetation or any part of a moist environment contaminated by urine or tissue of infected animals or humans. These bacteria can be inactivated by drying, but can survive in a moist environment for weeks or months. Humans and animals can become infected through direct contact with infected urine or other body tissues.

The *Leptospira* organism can enter the body through:

- broken skin (cut or scratch)
- mucous membranes (lining of the mouth, eyes, nose or genitalia)
- ingestion of contaminated water or food or eating infected tissues or carcasses

If an animal is infected with a type of *Leptospira* that is adapted to that species of animal, then the animal will not show clinical signs of illness, but will excrete the bacteria in its urine for months or even years contaminating the environment. Animals will show clinical signs of leptospirosis when infected with a type to which it is not adapted.

Clinical Signs in Dogs

Clinical signs of leptospirosis in dogs can vary in severity based on the strain of bacteria, geographic location and how the dog's immune system reacts to the infection. Some dogs show no signs of illness, some have a mild transient illness and recover spontaneously, while others develop severe illness and death. Signs can be very nonspecific and include:

- fever
- lethargy
- lack of appetite
- depression
- vomiting and or diarrhea
- muscle pain and reluctance to move
- weakness
- increase thirst
- changes in frequency and amount of urine
- yellowing of the skin and mucous membranes

The disease can cause kidney failure and liver failure and bleeding disorders associated with blood tinged vomit, urine, stool or saliva.

Clinical signs of leptospirosis in livestock like cattle, sheep, and horses can vary from fever and loss of appetite to signs of kidney and liver damage. Leptospirosis can also cause abortions, still births and premature births in several species including horses and cattle.

Diagnosis

In addition to the physical examination, your veterinarian may recommend radiographs and ultrasound examination, and testing that identifies antibody production and DNA of the organism. *Leptospira* infection is confirmed by clinical signs and laboratory tests performed on blood and urine.

Starting proper antibiotic therapy early in the course of leptospirosis will reduce the spread of the disease and minimize the severity of liver and kidney damage. Pets may have to be hospitalized to receive intensive or supportive care especially in the moderate to severe stages of leptospirosis.

Prevention

There are approved vaccines available for pigs, cattle and dogs to protect against some of the most common strains of *Leptospira*. Your veterinarian is the best source of recommendations for the appropriate vaccination schedule for your animals.

Reducing your pet's exposure to possible sources of the *Leptospira* bacteria can reduce its chances of infection.

- Avoid letting your dog drink from or swim in rivers, lakes, ponds, marshy areas or slow-moving or stagnant water.
- Minimize contact with wildlife, farm animals and rodents, including carcasses.

What if my Dog is Diagnosed with Leptospirosis?

If a dog is diagnosed with leptospirosis, take the following precautions advised by the Oklahoma State Department of Health:

- Administer antibiotics properly as prescribed by your veterinarian.
- Always wear gloves when handling the dog, cages, bowls, or other items that may be contaminated with urine. It is recommended to wash and disinfect any urine or fluid stained areas or items with a 10 percent household bleach (1 part bleach to 9 parts warm water). But remember even diluted bleach may permanently discolor wood laminate floors, carpet and upholstery.
- Segregate the infected dogs isolated from other animals. Test all other dogs in the household and property for leptospirosis.
- Take the dog to an isolated and confined area to urinate. This area should not be accessible to other dogs or children and should be away from, ponds, creeks or pools.
- Wash hands thoroughly with soap and water after handling or playing with the dog.
- If any person in the household develops flu-like symptoms, consult a physician as soon as possible and inform of possible leptospirosis exposure.

For more information visit:

Oklahoma State Department of Health: http://www.ok.gov/health/Disease_Prevention_Preparedness/Acute_Disease_Service/Disease_Information/Leptospirosis.html

American Veterinary Medical Association: www.avma.org

American College of Veterinary Internal Medicine: www.acvim.org

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