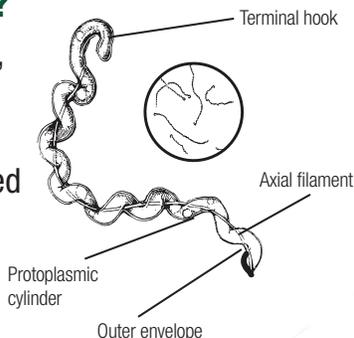


## Frequently Asked Questions for Veterinarians

### What is leptospirosis?

Leptospirosis is a zoonotic, multi-organ disease that affects humans, dogs and other mammals. It is caused by spirochete bacteria called *leptospirae* that are shed in the urine of infected animals. There are multiple serovars of the bacteria, many of which have adapted to different animal reservoir or maintenance hosts, such as rats, raccoons and cattle. The disease is rarely seen in cats.



### Has leptospirosis been detected in dogs in New York City (NYC)?

Yes. Passive surveillance by the NYC Department of Health and Mental Hygiene has identified canine leptospirosis cases in all five boroughs since reporting began in 2006.

While results from microscopic agglutination testing (MAT) do not accurately predict the infecting serogroup, the highest titers reported among NYC dogs are *L. icterohaemorrhagiae*, *L. bratislava* and *L. grippityphosa*. These serovars are mainly associated with rats and other small mammals. Canines are the reservoir host for *L. canicola*, but infection has only been reported in a very small number of NYC dogs since 2006.

### When do infections usually occur?

Most leptospirosis cases are reported from May to January, with spikes from August to October. Owners of infected dogs often report their pet was exposed to puddles, which typically occur following heavy rainfall and may be contaminated with *Leptospira*.

### How is leptospirosis transmitted?

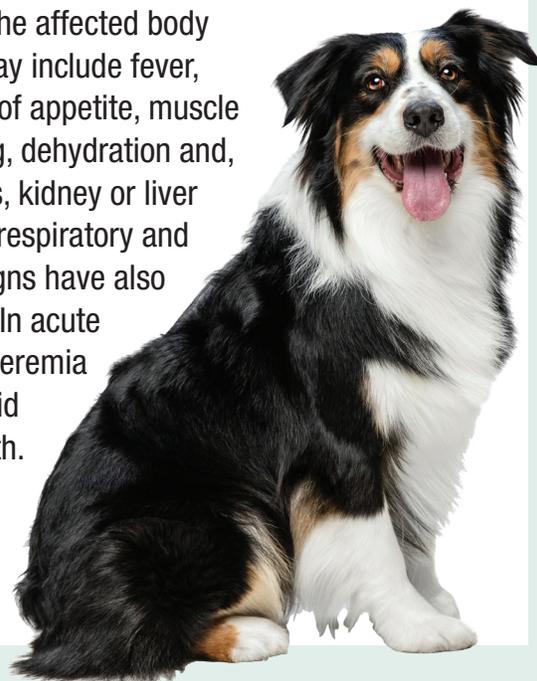
Leptospirosis is usually transmitted through direct or indirect contact with infected urine. Infected animals shed the bacteria when they urinate, contaminating the surrounding environment. The bacteria enter the body through a mucosal surface, or abrasion or cut on the skin following exposure to infected urine or contaminated water or soil. Generally, dogs and other animals that develop acute illness with leptospirosis are incidental hosts. Transmission from incidental hosts to humans or animals is rare.

### What is the main source of infection in NYC?

Exposure to environments or pools of water contaminated with rat urine is the main source of infection in NYC. While direct contact with an infected reservoir species is rare, owners of infected dogs often report seeing rats, raccoons or other small mammals near their home or where their dog was walked.

### What are the signs and symptoms of leptospirosis?

Dogs usually show signs of leptospirosis one to two weeks after exposure to the bacteria. Signs vary depending on the affected body systems but may include fever, shivering, lack of appetite, muscle aches, vomiting, dehydration and, in severe cases, kidney or liver failure. Ocular, respiratory and neurological signs have also been reported. In acute infections, bacteremia can lead to rapid shock and death.



## How do I diagnose leptospirosis?

Leptospirosis is diagnosed based on exposure history, clinical presentation, elevated liver or kidney values, and diagnostic testing. Rapid point-of-care tests can help guide clinical decisions before MAT and polymerase chain reaction (PCR) results are available. A positive result using a PCR test on blood or urine can confirm infection, but a negative PCR result should not rule out infection. Paired MAT results from acute and convalescent specimens can also confirm a diagnosis. Acute MAT titers may be negative if serum is collected too soon after illness onset to mount an immune response, or positive if taken from a vaccinated dog and therefore not indicative of present infection. Convalescent serum should be collected two to three weeks after illness onset to confirm infection by showing a fourfold rise in titers.

## How do I treat leptospirosis?

Use antibiotics to treat the active infection and prevent or eliminate the carrier phase. Hospitalization with intravenous fluid therapy or dialysis may be necessary in severe cases. Early treatment usually prevents severe illness and increases chances of recovery.

## If a dog already had leptospirosis, can it get reinfected?

Yes. After recovery, an animal will only be immune to the serovar that caused the original leptospirosis infection.

## Can leptospirosis be prevented?

New multivalent vaccines provide yearly protection against four serovars: *L. canicola*, *L. icterohaemorrhagiae*, *L. pomona* and *L. grippityphosa*. These vaccines are less immunogenic than older bivalent vaccines.

## Can veterinarians and pet owners get leptospirosis from dogs?

While most NYC dogs are infected with serovars other than *L. canicola* (making them incidental hosts), every infected dog should be considered infectious. Dogs stop shedding the bacteria once antibiotics are initiated, decreasing the risk of human infection. Washing hands frequently after handling an infected dog or being exposed to urine is recommended, along with the guidelines below.

## What should I tell my staff and clients about infected dogs?

Tell staff and clients to:

- Avoid direct contact with urine, blood, vomit and tissue from infected animals.
- Have dogs urinate in an area where the urine will dry up quickly and contact with people and other dogs is less likely. Sunlight and drying up the urine will kill the bacteria.
- Clean areas that may have been contaminated by urine, fecal matter or vomit with an iodine- or bleach-based disinfectant.
- Wear disposable gloves when cleaning infected dogs' bedding.

Signs should also be placed on cages of infected dogs so staff know to take precautions when around them.

## Where can I get more information?

- For more information and resources on leptospirosis, visit [nyc.gov/health](https://nyc.gov/health) and search for **leptospirosis**.
- For canine leptospirosis data summaries, visit [nyc.gov/health](https://nyc.gov/health) and search for **veterinary alerts**.
- For NYC rat inspection maps and information about rat prevention and management, visit [nyc.gov/rats](https://nyc.gov/rats).

