



# LEPTOSPIROSIS: Farm dogs (and other pets in rural areas)



This fact sheet provides information about the risk and complex nature of leptospirosis infection in farm dogs.

## KEY POINTS

- > Leptospirosis is easy to catch from an infected animal and its environment.
- > Infection can occur through breaks in the skin or through mucous membranes of the eyes, nose or mouth.
- > Protect yourself, your family and staff by vaccinating your animals, controlling rodents, practicing good personal hygiene, using protective equipment, and seeking help early if you feel unwell.

## WHAT IS LEPTOSPIROSIS?

Leptospirosis is an infectious disease transmitted from animals to humans (a zoonosis), and from animal to animal, through cuts or cracks in the skin or through the mucous membranes of the eyes, nose or mouth. It is present in almost all warm-blooded mammals, including farm, domestic and feral animals.

Leptospirosis spreads easily, and is caused by bacteria known as leptospires that multiply in the kidneys of animals and are shed in the urine. The bacteria thrive in moist or wet conditions and can survive for months.

## HOW ARE PEOPLE INFECTED?

People can catch leptospirosis from infected animal urine. Even a splash or fine spray of urine or indirect contact with urine-contaminated water can spread large numbers of leptospires.

Cuts, sores and skin grazes increase the risk of infection, as does licking your lips and eating or smoking before washing and drying hands.

## WHAT ARE THE SYMPTOMS IN PEOPLE?

People affected by leptospirosis, either mildly or severely, may not show symptoms. Infection may just feel like a bad case of the flu, with headaches and fever. Severe cases can result in permanent complications, usually kidney or liver damage.

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Some people may be unable to work for months and, in severe cases, be unable to return to running their farm. The disease can keep coming back.

Pregnant women can miscarry. Death from infection is rare.

### WHO IS AT RISK OF INFECTION?

Although infection in dogs is much less common than in livestock, infected dogs do pose a risk to humans and other animals. Some farm dogs will carry the disease and spread it without becoming unwell themselves.

### HOW ARE DOGS INFECTED?

Like other farm animals, dogs are infected by contact with infected animal urine. Farm dogs spend a lot of time in the water, drinking out of puddles and running in the yards, and they stay wet after it rains.

Dogs of any age, breed or gender can be infected, although it is more likely in dogs less than six years old<sup>1</sup>. Smaller dog breeds and farm working breeds have the same risk of exposure to Copenhageni – the most common serovar (strain)<sup>2</sup>.

### WHAT ARE THE SYMPTOMS IN DOGS?

Leptospirosis is a complex disease in dogs. Symptoms can depend on the serovar<sup>3</sup>. Some serovars can cause severe liver and kidney disease in dogs, but it isn't common. Young dogs tend to be more severely affected by infection.

Infection is difficult to recognise – clinical signs will vary, depending on the serovar. Dogs with rapid onset of symptoms may have:

- > fever
- > depression



- > weakness
- > vomiting
- > muscle pain
- > pale gums
- > jaundice (yellow tint to skin).

However, most dogs don't have rapid onset of symptoms but are chronically infected. They may show no obvious symptoms and severe illness can rapidly result in death with only a few signs, such as:

- > lethargy
- > muscle tenderness
- > shivering.

Dogs with more common infections will be:

- > off their food
- > lethargic
- > unwilling to move
- > vomiting
- > more thirsty.

<sup>1</sup> The vets: life for pets. (2010). Dogs: vaccinations. Retrieved December 2014 from [www.thevets.net.nz/dogs/vaccinations.cfm](http://www.thevets.net.nz/dogs/vaccinations.cfm).

<sup>2</sup> Harland, A., Cave, N., Jones, B., Benschop, J., Donald, J., Midwinter, A., Squires, R., Collins-Emerson, J. (2013). A serological study of leptospiral antibodies in dogs in New Zealand. *New Zealand Veterinary Journal*. 61(2), 98-106.

<sup>3</sup> The vets: life for pets. (2010). Dogs: vaccinations. Retrieved December 2014 from [www.thevets.net.nz/dogs/vaccinations.cfm](http://www.thevets.net.nz/dogs/vaccinations.cfm).

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## HOW DO YOU MANAGE THE RISK AND PROTECT AGAINST INFECTION?

Minimisation is the best option for managing risk, as leptospirosis is difficult to eliminate. This can be done through vaccination programmes and other controls.

### ANTIBIOTICS

Treating infected dogs includes antibiotics and good supportive care (ie intravenous fluids to support hydration and blood pressure). Aggressive treatment and supportive care in hospital may save some dogs, but unfortunately death isn't uncommon.

Cats are far less at risk, rarely becoming unwell. They seem to have natural resistance and therefore aren't vaccinated for leptospirosis.

Antibiotic treatment involves two phases.

**Phase One** is to:

- > prevent *Leptospira* from reproducing
- > decrease the chance of shedding
- > protect the liver and kidneys from complications.

Usually, penicillin injections are given for about two weeks, followed by another antibiotic.

**Phase two** is to remove any remaining *Leptospira* from the kidneys. Because several organs can be affected, regular blood tests should be taken during early stages of treatment.

### VACCINATION

Leptospirosis can be very serious, and all pet owners should consult with a vet to decide whether or not to vaccinate their pet.

Leptospirosis isn't usually included in routine dog vaccinations; however, vaccination should be considered, especially if dogs have regular access to areas where rats likely live.

Leptospiral vaccines for dogs only offer about 6-8 months protection, so dogs at high risk should be vaccinated twice a year. Vaccination is very effective if the recommended dose is followed.

Puppies should be vaccinated at nine and 12 weeks old (if older than nine weeks at first vaccination, two vaccinations are still needed). Adult dogs should be vaccinated one year after puppy vaccinations, followed by annual vaccinations. Lifelong annual boosters are needed to ensure the best possible protection.

Vaccine will reduce the severity of the disease, but it won't prevent some dogs from continuing to carry leptospirosis.

### FURTHER CONTROLS

- > Take care when handling dogs.
- > Avoid contact with dog urine - dogs that seem well can still shed *Leptospira* in their urine for many months after treatment.
- > Keep kennels clean.
- > Control rodents and possums. Keep them away from stored food and other crops - make sure no excess feed is lying around.

### WATCHING YOUR HEALTH

The sooner treatment starts, the better.

### FIRST AID

A readily available supply of clean water is important.

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Look after your health. As soon as there is exposure to urine or infection is suspected:

- > dry off urine splash immediately (leptospirae dry out easily), then wash the area
- > wash hands and face well, taking particular care with facial hair
- > use soap and water, and dry well
- > flush out your mouth and eyes, and any exposed skin with lots of running water
- > wash out fresh or old cuts and grazes with water and disinfectant, and dry well
- > tell a supervisor.

### PRIMARY CARE TREATMENT

- > See a doctor within 24 hours of suspected exposure or if flu-like symptoms develop, to get antibiotic treatment and have a blood sample taken.
- > Tell the doctor that leptospirosis may be the cause of your illness – some doctors may not be familiar with the symptoms.
- > Treatment options will depend on the severity and duration of the symptoms. Antibiotic treatment should be given if leptospirosis infection is strongly suspected.
- > The blood sample MUST be taken before medication is taken – a subsequent sample may be needed 3-4 weeks later.
- > All patients with severe infection or signs of meningitis should be sent to hospital immediately.

### FINDING OUT MORE

[Good Practice Guide: Prevention and Control of Leptospirosis](#)

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