

Leptospirosis

Leptospirosis is caused by bacteria that are spread via the urine of infected animals. It is a serious zoonotic disease, which means it can be spread to humans by contact with infected urine.

There are different strains (known as serovars) that are responsible for the disease. 2 strain (bivalent) vaccines provide protection against *Icterohaemorrhagiae* and *Canicola* serovars but recently a 4 strain (tetraivalent) vaccine for leptospirosis has been licensed and recommended for use in dogs within Europe (see Additional serovars section below).

Serovar *Icterohaemorrhagiae* (Weil's disease)

The rat is the main carrier of the disease. Transmission to dogs is either directly via contact with infected urine, or indirectly via contact with contaminated water eg: drinking or swimming in canals or rivers inhabited by infected rats. The symptoms can vary from mild non-specific signs such as lethargy and depression, to more severe signs such as abdominal pain, jaundice, liver damage and even death. Dogs that have been infected may go on to become carriers so shedding the bacteria in their urine.

Serovar *Canicola*

The dog is the main carrier of disease. This form of disease primarily affects the kidneys and clinical signs can vary from mild and non-specific, to kidney failure or sudden death. Again, dogs that recover from the disease can become carriers and shed the bacteria in their urine, for up to 2 years.

Additional Serovars

In recent years serovars other than the two listed have been shown to trigger this disease too and in some countries serovars other than the two listed above appear to predominate. Expert opinion now advises that leptospirosis vaccines now cover a wider variety of serovars to ensure protection is current and appropriate to the local disease risks. Current advice is that for dogs within Europe, strains within serogroups *Australis* (e.g. Bratislava) and *Grippityphosa* are significant and should be covered for all European dogs at risk of this disease. The Bratislava serovar also appears now to be a significant cause of the disease in the UK and in addition UK reports have also been received of dogs that have travelled to or from parts of continental Europe where *Grippityphosa* is particularly common and succumbing to this form of the infection too.

A new vaccine is now available that covers representative strains from all 4 important groups being diagnosed in the UK and Europe. Should you be concerned please discuss the risk of leptospirosis in your pet with the practice.

Who is at risk?

All dogs that are exercised out of doors or have access to rodents or where they have urinated, as well as humans are at risk. Given how this disease spreads most dogs are potentially at risk and therefore most dogs in the UK receive annual vaccination against leptospirosis. As such, it is important to protect animals from this bacteria through annual vaccination which not only provides disease protection but can also impact shedding of infection in urine, minimising the chance of spread of disease.

How is it spread?

After ingestion of the bacteria, the leptospires enter the blood stream via the mucous membranes. This is followed by a rapid replication in several tissues such as the kidney, liver and spleen. The bacteria is then excreted via the animal's urine back into the environment.

How will the vet know what is wrong?

Your vet will suspect that your dog might have leptospirosis from the symptoms that you describe, your dog's vaccination history and the findings on physical examination. A blood test may show a severe decrease or indeed an increase in the white blood cell number and/or damage to the liver and kidneys. Further analysis of the blood may also indicate exposure to Leptospirosis.

Management of leptospirosis

Leptospirosis is a life-threatening disease which can prove challenging to diagnose and treat. Early recognition of the disease and appropriate treatment including aggressive intensive care and antimicrobial therapy are required for treatment but even then are no guarantee of a successful outcome.

Vaccination

Prevention through vaccination is far better than cure not least when the disease is potentially fatal, hard to diagnose and treat. An improved leptospirosis vaccine is now available that offers a wider spectrum of protection to dogs as well as reducing the chance that infection is spread to others via the urine. It is important to re-vaccinate your dog on a yearly basis against this disease to continue the optimum level of protection - studies have shown that protection starts to wane after 12 months. Please contact your vet regarding further advice on vaccination against leptospirosis.