

The Commission is aware of recent reports regarding several Neospora cases affecting greyhounds in NSW.

What is Neospora caninum (N. caninum)?

N. caninum is a protozoan parasite which can infect the cells and tissues of a wide range of warm-blooded mammals and occurs worldwide. Domestic dogs and wild dogs are the main hosts ('definitive hosts') for this parasite. Infected dogs shed the parasite in their faeces, which can result in the infection of other dogs or other mammals (i.e. cattle, sheep, horses and many other species) which are known as 'intermediate hosts'.

In Australia, studies conducted during the 1990s indicated that between 5% and 15% of domestic dogs have antibodies to Neospora, indicating that a large proportion of the population has been exposed to this parasite.

In a recent study conducted in 2017 involving domestic (pet) dogs in Victoria, 29.8% of the dogs tested were found to have antibodies to Neospora. This study indicates that Neospora infection is now more common than in previous years.

Neospora caninum is a relatively common cause of abortions in cattle in Australia. Properties where domestic dogs or wild dogs and cattle co-exist may be at increased risk of observing this disease. Research indicates that approximately two-thirds of beef cattle herds in NSW show evidence of infection with N. caninum.

How does the disease spread?

Infection can occur in dogs via the following routes:

- by consuming contaminated food or water containing the parasite;
- by ingesting infected tissues/meat from an 'intermediate host' (e.g. cattle, sheep, horses, goats, deer);
- infection can be passed from a dam to her puppies via the placenta prior to birth or via the dam's milk following whelping.

What are the symptoms of N. caninum infection?

Most adult dogs will not show any symptoms when they are infected.

However, symptoms are often observed in infected puppies or young dogs, particularly those less than 6 months of age. The most severe infections tend to occur in young puppies and can be fatal. Puppies which are infected prior to birth (i.e. by the infection passing from the dam via the placenta) or soon after birth (i.e. via an infected dam's milk) are often severely affected and may not survive. The entire litter may be affected, leading to significant illness and loss of puppies. If an infected dam is not identified and treated, subsequent litters may also be affected.

Symptoms in puppies typically involve abnormalities of the nerves and muscles. Symptoms can include partial or complete paralysis of the front or hind legs. The paralysis often progresses, becoming worse over time and can result in rigid contraction of the muscles of the affected limbs. Hind limbs are often worse affected than forelimbs. Other symptoms include: weakness of the neck and difficulty swallowing, difficulty walking / incoordination, severe diarrhoea, pneumonia, heart problems.

In adult dogs, neurologic signs (such as inflammation of the brain and spinal cord), skin inflammation with sores, inflammation of the liver, pneumonia, and inflammation of the heart may occur.

The outlook for puppies or adult dogs with severe symptoms is often poor due to the permanent damage which can occur to their muscles, nerves and organs.

What can I do to prevent transmission of N. caninum?

There is no vaccine available to prevent infection with Neospora caninum.

Dogs should not be fed raw or undercooked meat, particularly beef. Where possible meat should be cooked to destroy any Neospora parasites which may be contained within the meat tissue.

There is some evidence that freezing meat for several days prior to feeding will reduce the risk of infection with Neospora, as freezing can destroy the parasite cells contained within the meat. However, cooking meat is still considered the best option as it is known to destroy Neospora and will also destroy other food-borne pathogens such as Salmonella and E. coli, which can survive freezing.

It is recommended that greyhound breeders should freeze and cook the meat they feed to breeding females and to puppies, to reduce the likelihood of Neospora infection in this particularly at-risk group.

Practice good hygiene when providing food and water to your greyhounds. Ensure bowls are cleaned regularly to avoid accidental ingestion of faeces which can spread Neospora infection.

Ensure dog yards and housing are cleaned daily to remove faeces.

In rural areas, minimise contact between greyhounds and wild dogs or foxes.

Ensure you have adequate rodent control practices in place – mice and rats are known to be 'intermediate hosts' for Neospora and can spread infection.

Breeders may wish to consider testing their brood bitches to determine whether they have been exposed to Neospora. Discuss this option with your veterinarian.

What should I do if I suspect my greyhound has N. caninum?

If you suspect your greyhound may have Neospora, you should contact your regular veterinarian immediately. Your vet can conduct tests on your greyhound which can confirm the infection. Medications are available which can assist in treating Neospora infection. Treatment is more likely to be successful if the infection is identified early and the greyhound's symptoms are not severe. Treatment may require a long course of medication.

If you have any questions or concerns, please contact the Commission's veterinary team on 13 GWIC (13 49 42) or email vets@gwic.nsw.gov.au

