

Toxocara infection in dogs and cats

What is Toxocara?

Toxocara (*T. canis* in dogs and *T. cati* in cats) are large nematodes living in the small intestine which can cause disease in young dogs and cats. Puppies can be heavily infected before birth *in utero* or via their mother's milk. In kittens, infections are only passed on via the queen's milk. Infection of humans can occur as a result of accidentally ingesting infective eggs from the environment or, less frequently, by eating undercooked meat from paratenic hosts (mammals and birds) containing larvae.

Clinical signs

Puppies and kittens infected with a heavy burden of migrating larvae may present respiratory signs. During the course of infection they may also have loose faeces, develop severe intestinal disorders and may appear cachectic with a distended abdomen. *Toxocara* spp. patent infections can also occur in older dogs and cats but such infections rarely lead to clinical signs.

Epidemiology

Toxocara canis and *T. cati* are ubiquitous in dog and cat populations throughout the world. Prevalence of patent infections does depend on the animal's lifestyle and diet but is generally highest in puppies and kittens, lower in adolescents and lowest in adult dogs and cats. Dogs and cats become infected when they ingest infective eggs from the environment, raw meat or prey on an infected paratenic host (e.g. rodents). The eggs excreted in faeces become infective after several weeks in the environment and remain infective for years. Infective eggs from contaminated soil or vegetables can be a source of infection for humans and animals.

Diagnosis

Patent *Toxocara* infections are commonly diagnosed by examining the faeces with centrifugation flotation methods or, less frequently, with an antigen test. *Toxocara* eggs are easily recognisable as roundworm eggs; however, species identification requires detailed examination and is relevant because false positive results can be obtained if dogs ingest dog or cat faeces containing *Toxocara* eggs.

Caution must be taken in cases of negative results following faecal examination because (i) prepatent infections cannot be excluded and (ii) the number of excreted eggs may be under the detection limit of the analysis.

Treatment

Puppies should be treated with appropriate anthelmintics from 14 days of age and **kittens** from 3 weeks of age (prenatal infection does not occur in kittens). This should be continued at fortnightly intervals until two weeks after weaning and then monthly until six months of age, where there is an ongoing increased risk of infection (e.g. attendance at puppy socialisation classes).



To reduce transmission to the puppies, **pregnant bitches** can be given macrocyclic lactones on the 40th and 55th day of pregnancy, or fenbendazole daily from the 40th day of pregnancy continuing until the 2nd day postpartum. **Pregnant queens can** be treated with emodepside spot-on approximately seven days before expected parturition to prevent lactogenic transmission of *Toxocara cati* larvae to the kittens.

Nursing bitches and queens should be treated concurrently with the treatments of their offspring until two weeks after weaning since they may develop patent infections.

Patent infections in **adult dogs and cats** are rarely associated with clinical signs therefore it is difficult to tell whether a dog or a cat is shedding eggs unless regular faecal examinations are conducted.

To minimise the risk of *Toxocara* egg excretion, deworming should be carried out at least 4 times a year. As an alternative to routine deworming, faecal examinations should be carried out at least 4 times a year followed by anthelmintic treatment where positive results are found.

Monthly treatment with a suitable anthelmintic will minimise the risk of patent infections and is recommended in high-risk scenarios (e.g. animals who are fed unprocessed raw diets, eat prey, are free roaming or have access to gardens and contaminated environments) and when the pet shares a house with small children or anyone who is immunosuppressed.

Preventive measures

Dogs and cats should not be fed undercooked or raw meat and care should be taken when they are hunting. If feeding raw meat, it should be frozen for at least 7 days at -18°C . Collecting and disposing of faeces regularly is a very important management measure.

Zoonosis

Toxocara species have zoonotic potential. After oral intake of infectious, larvated eggs or infected meat from paratenic hosts, the larvae may begin somatic migration (*larva migrans visceralis*). This can have serious consequences on human health. For this reason, *Toxocara* spp. infections in dogs and cats of all ages merit consideration.

For more information about *Toxocara* infections, please refer to ESCCAP's Guideline 1: Worm Control in Dogs and Cats