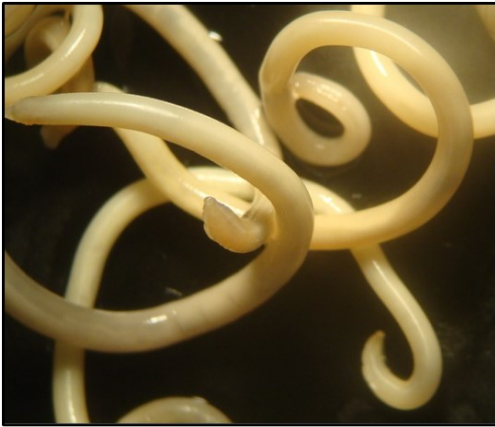
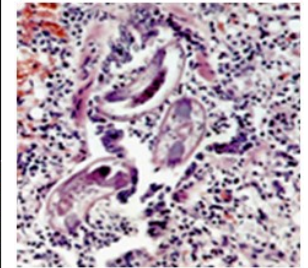
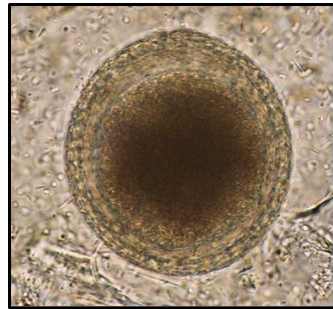


LIFE CYCLE AND TRANSMISSION OF THE ROUNDWORM *TOXOCARA CATI*

Toxocara cati is a zoonotic nematode of cats and other Felidae worldwide. The biology of this ubiquitous zoonotic nematode seems in many ways similar to that of *Toxocara canis* but research in many areas, especially in species-specific diagnosis, is needed to address important knowledge gaps.



Adult *Toxocara cati* in the small intestine pass eggs in faeces which then become infective on the ground, embryonating to an infective larva within the egg at a rate which depends on prevailing environmental conditions. As for *T. canis*, eggs will survive a very long period being protected by the presence of a thick egg shell typical of ascarids. Once an infective egg is ingested, there may be hepato-pulmonary migration: Eggs hatch in the intestine releasing larvae that penetrate the intestinal wall and travel to the liver and onto the lungs with the life cycle completed when the larvae are coughed up and swallowed, returning to the small intestine where they develop to adults. The prepatent period following infection by eggs is approx. 8 weeks. In older cats however, the larvae are less prone to migrate as above but rest as granulomas in the tissues – the so-called somatic stage



L3 in mouse lung



Somatic larvae reactivate during late pregnancy and Kittens are first infected by larvae excreted in the mothers milk throughout lactation. Larvae acquired in this way do not undergo hepato-pulmonary/tracheal migration but develop to adults directly. Kittens can become heavily infected. Eggs of *T. cati* will not appear in faeces until the end of the prenatal period when kittens are around 8 weeks old. There is no evidence for prenatal transplacental transmission



PARATENTIC HOSTS

Small mammals and birds can become infected if they ingest developed *Toxocara* eggs. Larvae from eggs travel to the tissues. If caught and eaten by a cat, the larvae in the tissues of the prey animal by-pass hepato-tracheal migration in the cat definitive host. This results in quicker infection with shorter prepatent period.

Paratenic hosts are likely to be of considerable significance in the transmission of *T cati* because of the strong hunting instinct in cats and often uncontrolled outdoor access

PUBLIC HEALTH

Although there are confirmed reports of human infection with *T. cati*, compared to our understanding of *Toxocara canis*, the relative significance of *T cati* in public health is unclear. Advances in differential molecular diagnostic techniques may elucidate the zoonotic role of *T. cati*