



TOXOPLASMOSIS IN CATS AND PEOPLE

Toxoplasma gondii is an intracellular coccidian parasite, and is one of the most common parasitic diseases of animals and humans. The definitive hosts of this parasite (this is the only animal in which the parasite can reproduce) are members of the feline family (mainly domestic cats). The intermediate hosts of this parasite (these are the animals in which the parasite can enter, but not reproduce) are virtually all warm blooded animals, including humans. Although infection of this parasite is common, it very rarely causes significant disease in any species.

LIFECYCLE

Cats usually become infected with *Toxoplasma gondii* by eating meat that is chronically infected with it (e.g. an infected mouse, or raw meat infected with the parasite). It penetrates the wall of the cat's intestine, and reproduces and eggs (called "oocysts") are excreted in the cat's faeces. As the cat starts to develop an immune response, this shedding of eggs in the faeces stops, the reproduction also stops, and the parasites are contained within the body inside tissue cysts.

Cats previously unexposed to *Toxoplasma gondii* usually begin to shed the eggs in their faeces between 3 to 10 days after ingestion of infected tissue, and continue to shed for around 10 to 14 days, during which time millions of eggs may be shed. Once a cat has developed an immune response to this parasite, further shedding of eggs is extremely rare. After the eggs have been excreted in the cat's faeces, they develop into spores. This takes 1 to 5 days, and once developed, they can be very resistant in the environment and survive for well over a year.

The intermediate host (eg : mice, birds, sheep, pigs, cattle and humans) can become infected by ingestion of these spores, and also by ingestion of infected meat. The unborn babies of these intermediate hosts can also become infected through the placenta, but this can *only* occur if the mother becomes infected *during* the pregnancy, as only a certain developmental stage of *Toxoplasma gondii* can cross the placenta.

PREVALENCE

Surveys generally show a 20-60% prevalence of cats infected with *Toxoplasma gondii*. This depends on many factors, with the main factor being the availability and eating of intermediate hosts (eg : mice, birds, raw meats). Infection is therefore more common in stray and feral cats than in pet cats, and the prevalence also increases with age.

Although there is generally a high number of cats infected, there is an incidence of less than 1% of cats that are shedding eggs in their faeces – *therefore less than 1% are infectious to humans*. This is because cats generally do not re-shed eggs following their first exposure.

THE DISEASE OF TOXOPLASMOSIS

Despite the high prevalence of cats infected with “*Toxoplasma gondii*”, actual clinical disease (where a cat becomes sick) is very rare. When disease does occur it is usually due to a poor immune system of the cat, and it may be linked to co-infection with a virus that effects the immune system – *such as Feline Leukaemia or Feline AIDS*.

PREVENTING INFECTIONS IN HUMANS

Around 30% of the population (in the U.K.) have evidence of infection but, as with cats, the vast majority of these human infections have either no clinical symptoms at all or only mild symptoms. The major concern with toxoplasmosis is with pregnant women. As noted before infection in a pregnant woman is only possible when a previously unexposed woman acquires toxoplasmosis *during* pregnancy. If this does happen there is a 40% chance that this will be transferred to the unborn baby, and in around 10% of these cases severe neurological (nerve) or ocular (eye) disease is present at birth.

Most surveys suggest that owning a cat, or having direct contact with a cat does not constitute an increased risk of acquiring toxoplasmosis. In industrialised countries it is mainly adolescents and adults who acquire infections, and this is usually due to eating undercooked meat or poor meat preparation hygiene. The following are a few measures that can be taken to greatly reduce the risk of infection :

1. Cook all meat thoroughly to at least 70°C.
2. Wash hands, utensils and surfaces carefully after handling raw meat.
3. Wash all vegetables carefully.
4. Wear gloves when gardening in soil potentially contaminated by cat faeces.
5. Empty cat litter trays daily, dispose of litter carefully, and disinfect with boiling water – wear gloves.
6. Discourage pet cats from hunting and avoid feeding them raw or undercooked meat.
7. Cover any children’s sand pits to prevent cats using them as a litter tray.