

TOXOPLASMOSIS

What is Toxoplasmosis?

Toxoplasmosis is a disease caused by infection with the organism called *Toxoplasma gondii* (*T. gondii*). This is a microscopic single-cell protozoal organism related to coccidia. Virtually all warm-blooded animals, including people, can be infected with this organism. It is an extremely well adapted parasite and *rarely* causes significant disease to the individuals it infects.

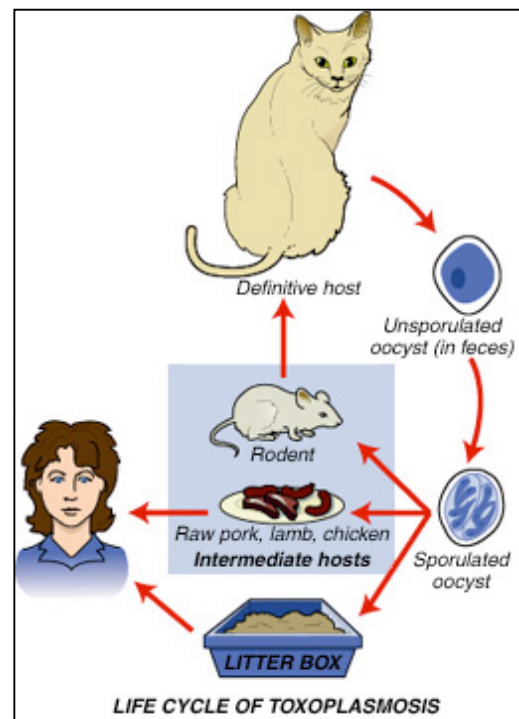
How common is Toxoplasma in cats?

Toxoplasma occurs worldwide and infection in cats is similarly widespread. Many more cats are infected than show symptoms. In research studies, as many as one half of adult cats in certain geographical areas have antibodies to the organism in their blood indicating that they have been exposed to the infection at some time. Infection rates are higher in free-roaming and stray cats. In contrast, infection is uncommon in pet cats that do little or no hunting, and are fed primarily or exclusively commercial cat foods.

How is Toxoplasma transmitted?

Cats are usually infected by ingesting the organism present in the tissues (meat) of another infected animal known as an 'intermediate host' which is usually a rodent. The *Toxoplasma* organism replicates first locally in the intestinal tract of the cat, and is often contained there. The replication in the intestinal tract results in shedding of oocysts in the feces. The oocysts represent a hardy form of the organism that can survive in the external environment for many months or even years. Other animals can become infected by ingesting these oocysts, but disease will result only if large numbers are ingested.

In some cats, particularly if their immune defenses are compromised, the *Toxoplasma* organisms can invade beyond the intestine and spread into various organs of the body. There, they may cause enough damage to cause signs of disease or may become dormant in a tissue cyst. This is not the same as the oocyst form. Such tissue cysts can be infective if the infected tissue is eaten by another animal.



How do people get Toxoplasmosis?

While cats are usually infected by eating infected rodents or more rarely by ingestion of oocysts from the environment, humans are most commonly infected through eating contaminated food. Sheep, cattle and pigs grazing on contaminated pastures, or fed oocyst-contaminated food, can also develop the encysted form of the organism in body tissues. If infected meat is not adequately cooked, or if proper hygiene precautions are not followed during handling of uncooked meat, humans can become infected. Ingestion of oocysts from infected cats, for example during gardening in contaminated soil, is a much less common source of human infection.

What disease does *Toxoplasma* cause in cats?

Although *Toxoplasmosis* is a relatively common infection, it usually causes no disease in infected cats. However, if the cat's immune system is not working properly, *Toxoplasma* may continue to replicate, spread and cause damage to tissues. When this happens a variety of different clinical signs can develop including ocular (eye) disease, respiratory disease, diarrhea, liver disease and neurological signs. Such disease may be acute or rapid in onset or more chronic with periods of illness interspersed with periods of some recovery. It is important to remember that *Toxoplasma* is a very rare cause of disease in cats.

How can you diagnose and treat *Toxoplasmosis*?

Toxoplasmosis is difficult to diagnose in cats because the signs can be so variable. Blood tests are available that will demonstrate, by the presence of antibodies to the organism, whether a cat has been exposed to the organism. These tests do not necessarily mean that *Toxoplasma* is the cause of any disease since most exposed cats do not develop disease. When *Toxoplasmosis* is suspected in a cat, it is usually treated with a course of an appropriate antibiotic.

How important is *Toxoplasma* in people?



Around 30% of the adult population has been exposed to *Toxoplasma*. As with infection in cats, the vast majority of people infected with this organism experience no clinical disease at all, or possibly just show mild and transient flu-like signs. However, there are also some individuals where significant disease does occur and one situation is particularly important. If a pregnant woman acquires *Toxoplasma* infection during her pregnancy, the infection may be transmitted to the fetus, and sometimes causes severe damage. This is only a risk though, if the woman acquires the infection during her pregnancy. A woman who has previously been exposed to the organism carries no risk of transmission to a fetus if she subsequently becomes pregnant.

How can human infection be avoided?

Although cats are essential to complete the life-cycle of *T. gondii*, numerous surveys have shown that people who own cats are not themselves at a higher risk of acquiring infection. There are several reasons for this:

1. Many pet cats will never be exposed to *Toxoplasma* and therefore cannot pass infection on to humans.
2. Even if a cat does become infected with *Toxoplasma*, it will only shed the oocysts or eggs in its feces for a short period, approximately ten days, after initial exposure. Following this there is no further significant oocyst shedding and therefore again no further risk to humans.
3. Although humans may become infected through exposure to, and ingestion of oocysts in the environment, a more common source of infection appears to be infected meat.

Following a few sensible environmental and meat hygiene measures can greatly reduce the risk of human infection:

- Cook all meat thoroughly - at least 160 -180°F (70 -82°C) throughout.

- Wash hands, utensils and surfaces carefully after handling raw meat.
- Wash all vegetables carefully.
- Wear gloves when gardening in soil potentially contaminated by cat feces.
- Empty cat litter trays daily, dispose of litter carefully, and disinfect with boiling water. If this is done every day, even if a cat is excreting oocysts, they will not have become infectious by the time the litter is changed. It takes more than twenty-four hours from when they are passed in the feces for the oocysts to develop into the infective stage.
- Discourage pet cats from hunting, and avoid feeding them raw or undercooked meat.
- Cover any children's sand boxes to prevent cats using them as a litterbox.

*This client information sheet is based on material written by Ernest Ward, DVM
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