

Toxoplasmosis (*T. gondii*)

DISEASE IN ANIMALS

Toxoplasmosis is an intracellular parasite that can infect a variety of mammals and birds. Wild and domestic cats are the definitive host, excreting infective oocysts in their feces that persist in the environment. The oocysts become infective one to five days after exposure to oxygen and can survive extreme temperature and humidity conditions for up to 18 months. Domestic animals most commonly infected include cats, sheep, goats and swine. Dogs and horses are infrequently infected and cattle are relatively resistant.

Reporting: This is not a required reportable disease in animals. However, veterinarians are encouraged to report to the [local health department](#) (LHD) the diagnosis of a cat that is shedding the organism, especially if there is a pregnant woman or immunosuppressed person in the household.

Clinical signs: The majority of infections are asymptomatic. Clinical cases are more likely to be seen in the young or immunocompromised. Signs may vary by the location of the cysts and include pneumonia, loss of vision and liver damage. Infection during pregnancy can cause abortion, particularly in sheep and goats.

Transmission: Animals that ingest or inhale oocysts from soil or dusts contaminated by cat feces develop tissue cysts that can persist for the lifetime of the host. Animals are also infected by ingesting raw meat or tissue containing toxoplasma cysts. Coprophilic flies and cockroaches may act as vectors transporting the oocysts from contaminated areas to food or water sources. *T. gondii* can cross the placental barrier.

While seroprevalence in domestic cats is very high indicating that many have been exposed at some time in their lives, it is estimated that less than one percent of cats are shedding at any given time. Naive cats, usually kittens, shed oocysts for one to two weeks before immunity develops eliminating fecal shedding and preventing reinfection.

Diagnostics:

- Cytology: tachyzoites or bradyzoites (tissue or lymph node biopsy, bronchoalveolar lavage, aqueous humor, CNS fluid)
- Fecal flotation for oocysts (cats only): Limited diagnostic value due to short period of shedding and difficulty in identification due to small size and similarity to other protozoa.
- Serology (ELISA, IFA, CF, or latex agglutination): IgG and IgM titers may help differentiate between acute and chronic infections

NOTE: Cats shedding oocysts are not yet likely to have developed positive titers, and cats with titers suggestive of previous infection will no longer be shedding oocysts.

Case classification:

- Suspected: a clinical case with signs consistent with toxoplasmosis.
- Probable: a clinically suspect case with laboratory evidence from a screening or unvalidated test.
- Confirmed: a case that meets confirmatory testing criteria determined by a state or federal diagnostic laboratory (e.g. demonstration of the organism in the tissue or feces of an animal).

DISEASE IN HUMANS

Reporting: In humans, two or more cases (e.g. outbreak) are required to be reported to the LHD.

Human illness: Human infections are usually asymptomatic in healthy individuals. About 20 percent of persons develop mild flu-like symptoms (fever, malaise, swollen lymph nodes, rash and muscle aches) that may take months to resolve. More severe infections are associated with immunocompromized individuals and manifests as myocarditis, uveitis or encephalitis that can be fatal. Exposure during pregnancy can lead to severe congenital sequela in the infant including mental retardation and loss of vision. Abortions and stillbirths may be seen, particularly when infection occurs during the first trimester.

Personal protection: Proper precautions should be taken when cleaning cages and handling cat feces. Oocysts will not have time to become infective if feces are removed daily and contaminated items are thoroughly cleaned. Staff should cover exposed skin and wear gloves. In some cases, goggles may be indicated. Feces from cats known or suspected to be shedding should be incinerated or handled as a biohazard. To prevent infection in cats, hunting should be discouraged and cats should be fed commercial pet food.

When counseling women of childbearing age and those who are immunocompromised it is important to stress that cat ownership is not a risk factor for toxoplasmosis. The majority of cases are acquired through contaminated soil and the handling of raw or undercooked meat. However, as a precaution, pregnant women are encouraged to avoid contact with cat feces. High-risk persons who are looking for a new cat should be encouraged to adopt mature cats that are already likely to have immunity.

FOR MORE INFORMATION

Disease in Animals

[Ohio Animal Disease Diagnostic Laboratory](#)
[Companion Animal Parasite Council, Toxoplasma](#)
[Toxoplasmosis in Sheep, University of W. Virginia](#)
[Toxoplasmosis Fact Sheet, Cornell University](#)

Disease in Humans

[ODH Infectious Disease Control Manual](#)
[Toxoplasmosis, CDC](#)