

# Toxoplasmosis

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## BASIC INFORMATION

### Description

Toxoplasmosis is a zoonotic disease (a disease that can be transmitted from animals to humans) that is caused by a protozoan parasite (a microscopic, one-celled organism). Toxoplasmosis can infect many different organs and cause serious signs of illness. Toxoplasmosis may also infect an animal without causing obvious clinical signs.

### Cause

Toxoplasmosis is caused by *Toxoplasma gondii*, which infects almost all species of warm-blooded animals. Cats are the only animals that can excrete oocysts (infectious forms) in their feces. The most common mode of transmission is eating raw or undercooked meat that contains tissue cysts or oocysts. Transmission across the placenta or through the mother's milk is also possible.

When cats ingest tissue cysts, parasites are released and multiply in their gastrointestinal tract. Oocysts are shed in the cat's feces for 1-3 weeks after its first exposure to the parasite. The oocysts become infective after 24 or more hours outside the cat's body. Any animal may then become infected by eating them.

The parasites multiply within intestinal cells and can spread throughout the body. Parasites may enter any tissue and cause illness. In addition, cysts may form in muscles. Cysts may remain dormant for the life of the animal, or they may become activated and cause illness at a later time.

Cats that are shedding oocysts in feces usually appear healthy. Cats with other forms of the parasite in their tissues may become ill.

### Clinical Signs

Clinical signs may develop more often in animals that are young, are immune suppressed, or have another infection. Signs are quite variable, depending on the organ or tissues involved. Weakness, incoordination, and other neurologic problems may be noted. Respiratory signs may occur, such as difficulty breathing, increased respiratory rate, and coughing. Inflammation of one or both eyes (uveitis) is a common manifestation in cats. If the liver and pancreas are affected, signs may include fever, decreased appetite, vomiting, weight loss, and jaundice (yellow color to the skin and gums). Multiple signs may be seen if the whole body is affected.

### Diagnostic Tests

Diagnosis of clinical toxoplasmosis can be made based on a combination of several laboratory tests:

- Blood and urine tests are often needed to determine how the body is affected by the infection.

- Tests for antibodies to toxoplasmosis can be performed on serum (from blood), cerebrospinal fluid (from a spinal tap), or aqueous humor (fluid from the eye).
- X-rays of the chest and abdomen and an abdominal ultrasound may be recommended.
- Microscopic examinations of tissue samples or of cells from cerebrospinal fluid and the respiratory tract may be helpful in identifying the organism.
- Cats that are ill do not shed oocysts in their feces, because their illness is a result of parasites in other tissues, not in the intestinal tract.
- Other tests may be needed to rule out diseases that cause similar clinical signs.

## TREATMENT AND FOLLOW-UP

### Treatment Options

Drugs usually suppress multiplication of *T. gondii* organisms but do not clear all of the organisms from the body. Clindamycin (an antibiotic) is often the drug of choice. Additional supportive care in the hospital may be needed, depending on the severity of the clinical signs.

### Follow-up Care

Nervous system and ocular signs are often slow to respond. Vision is often diminished or lost if uveitis is severe. Transmission of *T. gondii* can be reduced by limiting exposure to oocysts and tissue cysts. Feed cats only fully cooked commercial foods. Keep cats inside to prevent hunting.

### Public Health Information

Toxoplasmosis is usually transmitted to humans by ingestion of undercooked meats or, less commonly, food or water contaminated with oocysts. The disease is rarely transmitted by direct contact with cats. People can be exposed by contact with sporulated (infective) oocysts from litter boxes, gardens, or sandboxes.

To prevent exposure to people, practice good hygiene in food preparation and cook meats thoroughly. Litter boxes should be cleaned and treated with boiling water daily, so that oocysts do not have time to sporulate. Pregnant women and immune-suppressed people are the most susceptible to toxoplasmosis, so they should wear gloves and possibly a mask when changing litter boxes, or the task should be performed by someone else in the household.

### Prognosis

Prognosis for animals with widespread systemic disease is guarded (uncertain). Prognosis may only be determined in some cats by their response to initial treatment.