



1333 Plaza Blvd, Suite E, Central Point, OR 97502 \* [www.mountainviewvet.net](http://www.mountainviewvet.net)

## ***Toxoplasmosis, Toxoplasma gondii infection*** *Toxoplasmosis, Toxoplasma infection*

### **Affected Animals:**

All mammals, including cats and humans. For felines, the mean age of infection is four years, but can range from two weeks to 16 years. In recent studies, males have been affected more frequently than females.

### **Overview:**

The parasitic coccidial organism *Toxoplasma gondii* that is found in contaminated water, soil, and other substances, causes toxoplasmosis, which most often affects unborn kittens and cats with compromised immune systems. Although it is uncommon for infection to lead to serious clinical disease, toxoplasmosis can result in damage to the eye. In addition, it can cause gastrointestinal, respiratory, and neurological disorders that may be fatal.

Humans with weak immune systems and unborn fetuses are also at risk for infection. However, precautionary measures can be taken to ensure the health of felines as well as humans.

### **Clinical Signs:**

Signs of disease can occur acutely, or after the reactivation of a chronic, latent infection during periods of immunocompromise. Nonspecific signs of anorexia, lethargy, depression, fever, and weight loss can be seen. Signs indicative to the organ affected include icterus, vomiting, diarrhea, abdominal effusion, ocular discharge, photophobia, miotic pupils, dyspnea, seizures, ataxia, paralysis, muscle pain, and shifting leg lameness. Cats with severe respiratory or central nervous system signs may die rapidly. The ocular, respiratory, and gastrointestinal systems are more commonly affected than the neurological system.

### **Symptoms:**

The noted symptoms depend on the organ infected and extent of the damage present. Symptoms can include lack of appetite, tiredness, depression, weight loss, jaundice, vomiting, diarrhea, eye problems such as a runny discharge or squinting, trouble breathing, and neurologic disorders including a loss of balance, seizures, an inability to support weight, and limping. The onset of signs can be rapid and severe, especially in cats with respiratory or neurological infections.

### **Description:**

Toxoplasmosis can be an acute or chronic disease that results from infection by the *Toxoplasma gondii* organism. *T. gondii* is transmitted by exposure to contaminated soil or water, infective cat feces, cysts in infected meat, or blood containing the proliferating

form. It is estimated that 30 percent of cats and up to 50 percent of humans have been exposed to *T. gondii*; however, clinical illness is not common. Immunosuppressed cats and unborn kittens growing within a recently infected mother cat are at an increased risk of infection. The human fetus is at high risk if the mother is infected during pregnancy.

The manifestations and severity of the illness depend on the degree of tissue damage and the location of the *T. gondii* organisms. Sudden widespread infection usually is not fatal but may affect multiple organs such as the eye, central nervous system, and heart. Low grade, chronic tissue cysts usually cause no clinical signs unless the animal becomes immunosuppressed, allowing the organisms to proliferate and cause acute disease. Cats infected by feline leukemia virus (FeLV) or feline infectious peritonitis (FIP) are more likely to show clinical disease when infected with *Toxoplasma* organisms. The majority of cats that are infected with *Toxoplasma* have evidence of inflammation within the eye.

There are treatments available for toxoplasmosis but success will vary. Although residual effects of infection cannot be predicted prior to the course of treatment, eye problems generally respond better to treatment than advanced muscular or neurological disorders.

### **Diagnosis:**

A thorough history, physical examination, and laboratory testing will be needed to rule out other possible diseases that could cause similar symptoms. Blood tests can show anemia, low white blood cell count and liver enzyme elevations. Blood serology tests can give information about exposure to toxoplasmosis; however, these tests must be performed repeatedly to determine if infection is active or chronic. Other diagnostics that may be recommended include x-rays, cerebrospinal fluid analysis, and cytology, which analyzes fluid or tissue cells. Special fecal tests can detect the infective oocysts, although they are rarely shed when clinical disease is present.

### **Prognosis:**

Prognosis of symptomatic toxoplasmosis is guarded because of the varying responses to treatment. Young and immunocompromised patients do not have a good prognosis. Ocular disease usually responds to treatment whereas severe muscle and neurological forms tend to have residual deficits. However, chronic deficits cannot be predicted prior to starting therapy.

### **Transmission or Cause:**

Infection occurs via ingestion of tissue cysts or infective oocysts. There is an increased risk of infection and clinical disease for unborn or immunocompromised animals. Feline leukemia virus, feline immunodeficiency virus, feline infectious peritonitis, blood parasites, steroids, and chemotherapy can severely compromise the cat's ability to fight off a toxoplasmosis infection. Sources of tissue cysts and oocysts include undercooked meat, unpasteurized milk, contaminated water sources, soil or sandboxes contaminated with feces, flies, rodents, earthworms, and the litter boxes of infected cats.

### **Treatment:**

Most cats are treated on an outpatient basis unless they are severely debilitated. An antibiotic such as clindamycin is used for two weeks beyond the resolution of signs. Cats with ocular problems also may need a steroid eye drop to resolve the inflammation. Some medications for *Toxoplasma* can cause bone marrow suppression and would require monitoring and supplements to correct any problems. Other drugs are being examined for effectiveness against toxoplasmosis. Signs should begin to improve within 48 hours of

treatment. Frequent follow-up examinations by a veterinarian will be needed to assess response to treatment and to decide when the drugs can be discontinued.

**Prevention:**

Cats should be prevented from eating raw meat, bones, entrails, and unpasteurized milk. Flies and cockroaches can be carriers of the *Toxoplasma* organism and should not be eaten by cats. It is best to discourage the hunting of wild prey. Also, cats should be kept away from facilities that produce meat.

Humans can prevent infection by wearing gloves when gardening, covering outdoor sandboxes, thoroughly cooking meat to 150°F, washing hands and cutting boards well after handling raw meat, and drinking only pasteurized milk. Pregnant women and immunocompromised people such as AIDS and chemotherapy patients should avoid contact with litter boxes and, before eating, should wash their hands thoroughly if there has been recent physical contact with a cat. Litter boxes should be cleaned daily, as the oocysts, or eggs, shed in the feces are not infective for 24 hours.