

**Cat Tips** 

# Toxoplasmosis 101 — Keeping Your Cats and Family Safe

If you share your home with a cat or are considering adopting one, you've likely heard of this illness. But what causes it, and should you be concerned? Here's what you need to know.

#### Reviewed by Dr. Arielle Walton

#### STORY AT-A-GLANCE

- A common but misunderstood parasite, Toxoplasma gondii, lives in many warm-blooded animals, but only reproduces in cats
- Cats become infected by eating raw meat or prey. They shed parasite eggs for a short time, usually just once, into their feces, where they can contaminate the environment
- Most cats show no signs, but some may develop fever, jaundice, or neurological issues. Prompt vet care and testing are essential if symptoms appear
- You're more likely to get toxoplasmosis from raw meat or dirty produce than from your cat. Pregnant women and immunocompromised individuals should follow extra precautions, but don't need to give up their cats
- Clean your cat's litterbox daily, cook meat thoroughly, and practice good hygiene. These easy habits dramatically reduce the risk of infection and let you enjoy life with your cat safely

If you share your home with cats, protecting the health of both your pets and your family is a top priority. One important topic that often comes up in discussions about feline and human health is toxoplasmosis, a disease caused by the microscopic parasite Toxoplasma gondii.

Despite the frightening reputation that toxoplasmosis carries — particularly concerning for pregnant women and immunocompromised individuals — much of the concern stems from misinformation or misunderstanding. By understanding the nature of the parasite, its transmission cycle, and the role cats play in that cycle, you will be equipped to make informed decisions that promote the health and safety of all household members.

# **Toxoplasma Gondii** — The Parasite Behind the Disease

Toxoplasma gondii is a single-celled protozoan parasite capable of infecting nearly all warm-blooded animals, including mammals and birds. What sets cats apart from all other species, however, is that they are the only definitive host, meaning they are the only animals where the parasite completes its reproduction cycle. As a result, cats are the only species that can shed T. gondii oocysts (the infectious egg-like form of the parasite) into the environment through their feces.<sup>1,2</sup>

An estimated 60 million people in the U.S. are believed to be infected with T. gondii,<sup>3</sup> yet most are unaware due to the absence of symptoms. The parasite is considered one of the five "neglected parasitic infections" by the U.S. Centers for Disease Control and Prevention (CDC),<sup>4</sup> highlighting the need for increased public awareness and preventative action.

In most cases, infected animals and people do not exhibit symptoms, and their immune systems contain the parasite without complications. Yet the unique reproductive relationship between T. gondii and felines means that cats are an important focal point in the transmission cycle. Therefore, cats are often implicated — rightly or wrongly — in the public understanding of toxoplasmosis.

### **How Do Cats Become Infected?**

Cats most commonly contract T. gondii by consuming infected intermediate hosts, such as rodents, birds, or other small animals,<sup>5</sup> or by eating raw or undercooked meat that contains the parasite in cyst form.<sup>6</sup>

Once a cat becomes infected with T. gondii, the parasite multiplies in the cat's intestines, producing oocysts that are shed into the feces.

Typically, a cat begins shedding oocysts three to 10 days after ingesting infected tissue and continues shedding for approximately 10 to 14 days. During this time, millions of oocysts may be released into the environment. However, it is essential to emphasize that a cat generally sheds oocysts only once in its lifetime, immediately following the initial infection.<sup>7</sup>

While the shedding period is short, the oocysts themselves are exceptionally resilient. Once deposited into the environment, the oocysts require one to five days to sporulate — a process that renders them infectious. After sporulation, oocysts can survive in soil, water, and moist environments for several months or even over a year, depending on the conditions.<sup>8</sup>

# **Symptoms of Toxoplasmosis in Cats**

The vast majority of infected cats display no clinical symptoms. However, clinical signs may emerge in some cases, particularly in kittens, immunocompromised cats, or cats already infected with viruses such as Feline Leukemia Virus (FeLV) or Feline Immunodeficiency Virus (FIV). These can include:

- Fever and lethargy
- Loss of appetite
- Breathing difficulties (If the lungs are affected)
- Jaundice (If the liver is affected)
- Eye inflammation, such as uveitis or retinal lesions
- Neurological symptoms such as seizures, muscle tremors, loss of coordination, or behavior changes

These symptoms may suggest that the parasite has spread beyond the intestines to other organs and tissues. Hence, prompt veterinary care and diagnostic testing are needed.

# **Diagnosing Toxoplasmosis in Cats**

Veterinarians typically diagnose toxoplasmosis through a combination of clinical signs, a cat's health history, and laboratory testing. The most common tests measure levels of two antibodies in the blood — Immunoglobulin G (IgG) and Immunoglobulin M (IgM).

- **High IgG levels** suggest past exposure and likely immunity. These cats are unlikely to be shedding oocysts.
- **High IgM levels** indicate a recent or active infection and possible oocyst shedding.
- Absence of antibodies in an otherwise healthy cat indicates susceptibility to infection but no current illness
  or shedding.

Direct detection of oocysts in fecal samples is considered unreliable because the oocysts resemble those of other parasites, and cats typically shed them only briefly. A definitive diagnosis may require microscopic examination of tissue samples, particularly in symptomatic cats.<sup>9</sup>

## **Treatment Options for Toxoplasmosis in Cats**

In severe cases of toxoplasmosis, antibiotics are the primary treatment and may be used alone or combined with corticosteroids if the infection affects the eyes or central nervous system. Treatment should begin promptly and continue for several days beyond the disappearance of symptoms.<sup>10</sup> However, there are natural remedies that are showing promise in treating toxoplasmosis, like ginger<sup>11</sup> and other medicinal plants.<sup>12</sup>

The prognosis for cats with toxoplasmosis depends on how quickly treatment begins and which organs are affected. Cats with central nervous system or eye involvement may recover more slowly but can still have favorable outcomes. However, if the liver or lungs are compromised, the prognosis tends to be poorer.<sup>13</sup>

## **How Does Toxoplasmosis Spread to People?**

Contrary to common belief, direct contact with cats is not the primary way humans become infected with T. gondii. The most common source of human infection is the ingestion of raw or undercooked meat that contains T. gondii cysts. Additional pathways include:

- Eating unwashed fruits or vegetables contaminated with oocysts
- Drinking contaminated water
- Handling contaminated soil while gardening
- Cleaning a litter box and failing to wash hands afterward

Once ingested, the parasite can establish an infection and remain dormant in the body for years. For most people with healthy immune systems, infection does not lead to illness. However, for certain individuals, toxoplasmosis can cause serious health issues, particularly pregnant women and immunocompromised individuals.

If a woman contracts toxoplasmosis during her first pregnancy, there is a risk of transmitting the infection to her fetus, which can lead to severe congenital disabilities, such as vision and hearing loss, seizures, intellectual disabilities, and stillbirth.<sup>15</sup>

The risk of transmission and severity of effects depend on the stage of pregnancy during which the infection occurs. The majority of infants born to infected mothers show no symptoms at birth, but may develop complications later in life.

People with weakened immune systems, such as those with HIV/AIDS, undergoing chemotherapy, or taking immunosuppressive medications, are at greater risk of severe toxoplasmosis. In these individuals, the parasite may cause brain inflammation (encephalitis), pneumonia-like respiratory disease, vision problems, and heart and liver complications.<sup>16</sup>

Reactivation of a dormant infection is a common concern in these cases, and the mortality rate can be high without timely treatment.

## How to Keep Your Family and Pets Safe from Toxoplasmosis

The prevention of toxoplasmosis involves a two-pronged approach — reducing the risk of infection in cats and minimizing human exposure to infectious sources. The following guidelines apply broadly to all households, and particularly to those with pregnant individuals, children, or immunocompromised family members.<sup>17</sup>

#### • For feline pet parents:

- Avoid feeding raw or undercooked meat, which may contain tissue cysts.
- Keep cats indoors to prevent them from hunting prey, a significant source of infection.
- Clean the litter box daily, ideally by someone who is not pregnant or immunocompromised.
- Disinfect the litter box weekly using boiling water or bleach-based solutions.
- Avoid handling cat feces without protection; wear disposable gloves when cleaning the litter box and wash hands thoroughly afterward.
- Do not allow cats in your kitchen or near food preparation areas.

#### • For your family members:

- Cook meats thoroughly to safe internal temperatures.
- Wash all fresh fruits and vegetables under running water and scrub where appropriate.
- Use gloves when gardening and wash your hands afterward.
- If you have outdoor sandboxes, cover them when not in use to prevent cats from using them as litter boxes.

Interestingly, some studies suggest a potential link between latent T. gondii infection and behavioral changes, including increased risk-taking and slowed reaction times. <sup>18</sup> While more research is needed, this further underscores the importance of prevention, not just for those at high medical risk, but for public health as a whole.

# Is It Safe to Live with a Cat When You're Pregnant?

As long as proper hygiene and precautions are implemented, a pregnant woman can live safely with a cat. The CDC and other public health agencies have updated their recommendations to reflect this. The key is to reduce the chances of direct contact with cat feces and to follow food safety guidelines.<sup>19</sup>

If you're pregnant, avoid cleaning the litterbox if possible. If there is no alternative, wear disposable gloves and wash your hands immediately after cleaning. There is no need to rehome a beloved pet or limit contact beyond these routine measures.

## Compassionate and Informed Cat Ownership Is Key to Preventing Toxoplasmosis

Cats are cherished companions, and the benefits of sharing your home with a feline friend are well-documented — from emotional support and stress relief to companionship and entertainment. While toxoplasmosis is a genuine health concern, it should not be a source of fear or unwarranted guilt for cat owners.

By arming yourself with accurate information and following simple, consistent safety practices, you can enjoy all the joys of cat ownership while keeping yourself and your family safe. Misconceptions often lead to unnecessary worry — or worse, to the abandonment of cats. The truth is that responsible care and routine hygiene are more than sufficient to mitigate the risks associated with T. gondii.

#### **Sources and References**

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<sup>12</sup> <u>Asian Pacific Journal of Tropical Medicine, Volume 9, Issue 8, August 2016, Pages 730-734</u>

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