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Reducing Your Risk of Toxoplasmosis: Safe Food and Pet Practices

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What You Will Learn

- *Toxoplasma gondii* is a common parasite that infects humans and animals, but most people do not show symptoms.
- People can get infected by eating undercooked meat, contacting contaminated soil or water, or handling cat litter without proper hygiene.
- Pregnant women, people with weak immune systems, infants, and older adults are at higher risk for serious illness.
- Simple steps like cooking food thoroughly, washing hands and produce, and handling cat litter safely can prevent infection.

Toxoplasma gondii is a microscopic parasite that infects both animals and humans. Over 40 million Americans are believed to have been exposed to *Toxoplasma gondii*, but most remain asymptomatic. However, for certain groups—such as pregnant women and individuals with weakened immune systems—this parasite can pose serious health risks (CDC, 2022a). This report explores how *Toxoplasma gondii* spreads, its effects on health, and the steps that can be taken to prevent infection.

What is Toxoplasma gondii?

Toxoplasma gondii is a microscopic parasite found in animals and the environment; it can also infect humans. Cats can shed this parasite in their feces, making them an important host, but *Toxoplasma* can infect other animals, including livestock and wildlife. It is one of the most widespread parasites globally and can survive in the environment for extended periods.

How Do People Get Infected?

Humans can become infected with *Toxoplasma gondii* in several ways (CDC, 2022c):

- Eating raw or undercooked pork, lamb, or venison
- Consuming food that has come into contact with cat feces
- Drinking contaminated water
- Accidentally ingesting soil, sand, or vegetables containing parasite eggs
- Handling cat litter and not washing hands afterward
- Transmission from a mother to her unborn baby during pregnancy
- Receiving an organ transplant or blood transfusion from an infected donor (though this is rare)

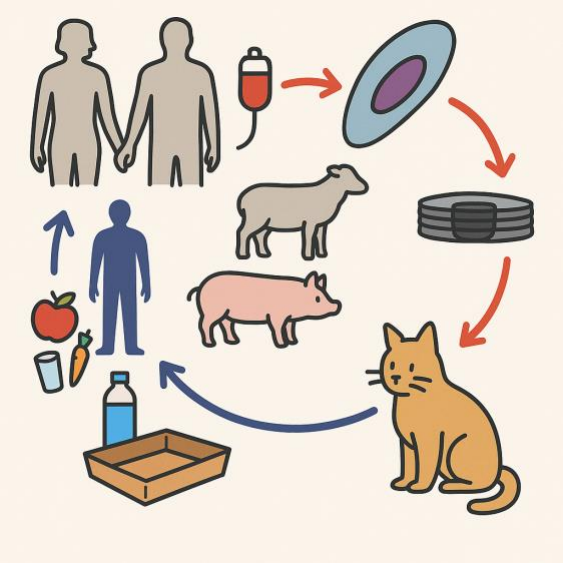

Figure 1. Main routes by which *Toxoplasma gondii* is transmitted between animals and humans (AI-generated image)

Who is Most at Risk?

While most individuals infected with *Toxoplasma gondii* experience no symptoms, some groups face a higher risk of severe illness (CDC, 2022b):

- Pregnant women: The parasite can cross the placenta, potentially causing birth defects, developmental delays, or even miscarriage.
- Individuals with a weakened immune system: Persons with HIV/AIDS, cancer patients undergoing chemotherapy, or organ transplant recipients may develop life-threatening infections, including brain inflammation (encephalitis).
- Infants and older adults: Their immune systems may not be strong enough to fight the parasite effectively.

Signs and Symptoms of Toxoplasmosis

Most infected individuals do not feel ill. Some may develop flu-like symptoms, including fever, swollen lymph nodes, muscle aches, and fatigue. Severe cases can result in eye infections, brain inflammation, and neurological complications.

Babies born with toxoplasmosis may have vision loss, seizures, or experience developmental delays.

Figure 2. Symptoms and complications that can result from *Toxoplasma gondii* infection. (AI-generated image)

How Can You Prevent Infection?

Preventing toxoplasmosis is simple with a few precautions (CDC, 2022d):

- Cook meat properly: Ensure meat is cooked to a safe internal temperature (above 145°F/63°C) to kill the parasite (U.S. FDA, 2018).
- Wash fruits and vegetables thoroughly: Rinse all products under running water before eating.
- Maintain good hygiene: Always wash hands after handling raw meat, soil, or cat litter.
- Avoid handling soiled cat litter if pregnant (U.S. FDA, 2018): If necessary, wear gloves and wash hands afterward.
- Keep cats indoors: This reduces their chances of becoming infected from hunting.
- Drink safe water: Avoid consuming untreated water from lakes, rivers, or unknown sources.
- Exercise caution when gardening: Animals that can carry *Toxoplasma* may defecate in soil.

References

Centers for Disease Control and Prevention. (2022a). About toxoplasmosis. U.S. Department of Health & Human Services. https://www.cdc.gov/toxoplasmosis/about/index.html

Centers for Disease Control and Prevention. (2022c). Toxoplasmosis: Risk factors. U.S. Department of Health & Human Services. https://www.cdc.gov/toxoplasmosis/risk-factors/index.html

Centers for Disease Control and Prevention. (2022b). Toxoplasmosis: Causes and transmission. U.S. Department of Health & Human Services. https://www.cdc.gov/toxoplasmosis/causes/index.html

U.S. Food and Drug Administration. (2018). Toxoplasma: Food safety for moms-to-be. https://www.fda.gov/food/people-risk-foodborne-illness/toxoplasma-food-safety-moms-be

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