



WHO ESTIMATES OF  
THE GLOBAL BURDEN  
OF FOODBORNE DISEASES

# Toxoplasmosis Fact Sheet

## Key facts

- Toxoplasmosis is a zoonotic infection caused by the parasite *Toxoplasma gondii* with a wide range of clinical syndromes in humans.
- World Health Organization (WHO) estimates that every year there are over 1 million cases of toxoplasmosis in the European region caused by contaminated food.
- For women, infection with *Toxoplasma* during or just before pregnancy can be particularly serious resulting in miscarriage, stillbirth or child disability.
- Persons with compromised immune systems are also at a higher risk of developing a severe form of toxoplasmosis.
- Cats are the primary hosts of the parasite, and they can excrete oocysts with their feces in the environment, which then can infect other animals and humans.
- Humans can get infected in different ways, the foodborne route being important. This can occur through consumption of undercooked infected meat, or through fruits and vegetables contaminated by oocysts in the environment.
- To prevent foodborne toxoplasmosis, one should follow the WHO Five Keys to Safer Food.

## Disease

Healthy individuals who become infected with *Toxoplasma gondii* often do not develop any symptoms because their immune system keeps the parasite from causing illness. Up to 95% of the population has been infected with *Toxoplasma* without developing any symptoms. When illness occurs, it is usually mild with “flu-like” symptoms that last for weeks to months. However, the parasite remains in their body in an inactive state and can become reactivated if the person becomes immunosuppressed.

Generally if a woman has been infected before becoming pregnant, the unborn child will be protected because the mother has developed immunity. If a woman becomes newly infected with *Toxoplasma* during or just before pregnancy, she can pass the infection to her unborn baby. The damage to the unborn child is often more severe the earlier in pregnancy the transmission occurs and can lead to miscarriage, stillbirth or a child born with signs of toxoplasmosis. Infants infected during pregnancy often show no symptoms at birth but may develop them later in life with potential vision loss, mental disability, and seizures.

Immunodeficient patients may experience severe neurologic disease due to acute or reactivation of toxoplasmosis. Brain involvement with or without focal Central Nervous System lesions is the most common manifestation in individuals with AIDS. In this group of patients common clinical findings include confusion, headache, seizures, nausea, weakness and poor coordination.

*Toxoplasma* infection can reactivate in immunocompromised pregnant women who were infected with *Toxoplasma* before their pregnancy, and this can lead to congenital infection in the unborn child.

Toxoplasmosis can also cause eye disease and is one of the most frequent causes of uveitis. Eye lesions from congenital infection are often not identified at birth but occur in 20-80% of infected persons by adulthood. The eye disease can reactivate months or years later, each time causing more damage to the retina and even lead to blindness.

**FOODBORNE DISEASES ARE PREVENTABLE.  
EVERYONE HAS A ROLE TO PLAY.**

For more information:  
<http://www.euro.who.int/en/health-topics/disease-prevention/food-safety>

**#SafeFood**

Source: WHO Estimates of the Global Burden of Foodborne Diseases. 2015.

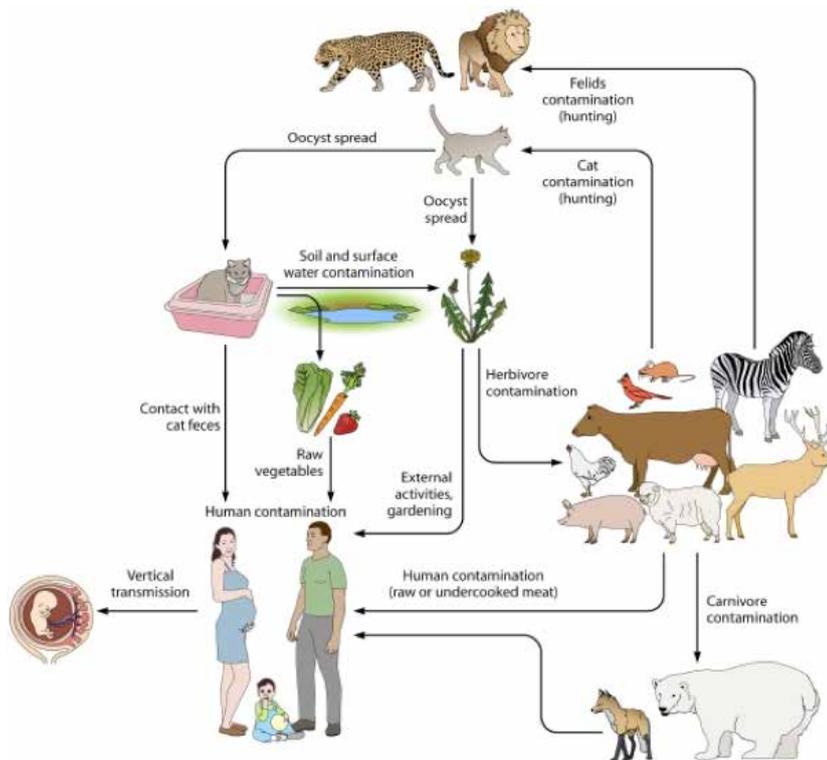


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## Sources and Transmission

*Toxoplasma gondii* is an intracellular protozoan parasite. The only known definitive hosts for *Toxoplasma gondii* are domestic cats and other members of the family Felidae. The animal usually only shed oocysts for 1-2 weeks, but large numbers may be shed. Oocysts take 1-5 days to sporulate in the environment and become infective. Intermediate hosts in nature (including birds and rodents) become infected after ingesting soil, water or plant material contaminated with oocysts. The oocysts develop into cysts in neural and muscular tissue. Cats can become infected after eating intermediate hosts harboring tissue cysts or by ingestion of sporulated oocysts. Food animals and wild game may also become infected with tissue cysts after ingestion of sporulated oocysts in the environment. In the intermediate host as well as in humans, the oocysts form tissue cysts.

Humans can become infected by any of several routes: eating undercooked meat of animals harboring tissue cysts, consuming food or water contaminated with cat feces or by contaminated environmental samples (such as contaminated soil or changing the litter box), blood transfusion or organ transplantation and transplacentally from mother to fetus. It is assumed that approximately half of the cases of toxoplasmosis are foodborne.



Source: © Robert-Gangneux F and Darde ML, 2012. Epidemiology of and diagnostic strategies for toxoplasmosis. *Clinical Microbiology Reviews*, 25, 264-296. Copyright license obtained from the American Society for Microbiology.

## Diagnostic and Treatment

The diagnosis of toxoplasmosis in humans is typically made by serologic testing, which measures immunoglobulin G (IgG) titres to determine if a person has been infected. To estimate the time of infection, of particular importance for pregnant women, a test which measures immunoglobulin M (IgM) is used. Diagnosis can be made by direct observation of the parasite in stained tissue samples. Molecular techniques that can detect the parasite's DNA in the amniotic fluid can be useful in cases of possible congenital transmission.

Toxoplasmosis can be treated with a combination of drugs. If one is infected during pregnancy, the mother and the baby should be closely monitored during pregnancy and after the baby is born. Persons with compromised immune systems, like AIDS patients, might need medication for the rest of their lives or for as long as they are immunosuppressed.

## Prevention

To prevent foodborne toxoplasmosis, one should follow the WHO 5 Keys to Safer Food. Hygiene including hand-washing and the use of clean water in food production and preparation is critical. Pregnant women should avoid undercooked meat.

It is advisable that pregnant women wear gloves when gardening and during contact with soil or sand because it might be contaminated with cat feces that contain *Toxoplasma*. Furthermore, cat litters should be changed daily, since it takes 1-5 days for oocysts to become infective. Pregnant women should avoid changing cat litters.

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