



Centers for Disease Control and Prevention

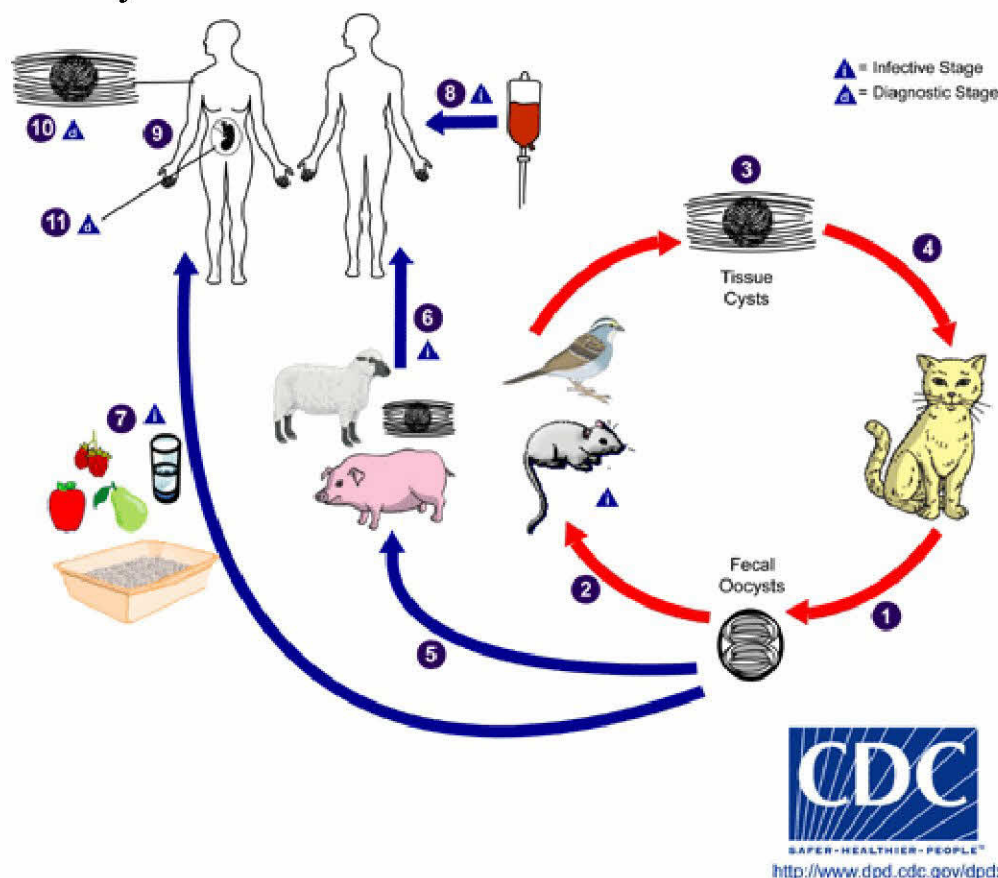
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Biology

Causal Agent:

Toxoplasma gondii is a protozoan parasite that infects most species of warm blooded animals, including humans, and can cause the disease toxoplasmosis.

Life Cycle:



The only known definitive hosts for *Toxoplasma gondii* are members of family Felidae (domestic cats and their relatives). Unsporulated oocysts are shed in the cat's feces ①. Although oocysts are usually only shed for 1-2 weeks, 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 ②. Oocysts transform into tachyzoites shortly after ingestion. These tachyzoites localize in neural and muscle tissue and develop into tissue cyst bradyzoites ③. Cats become infected after consuming intermediate hosts harboring tissue cysts ④. Cats may also become infected directly by ingestion of sporulated oocysts. Animals bred for human consumption and wild game may also become infected with tissue cysts after ingestion of sporulated oocysts in the environment ⑤. Humans can become infected by any of several routes:

- eating undercooked meat of animals harboring tissue cysts ⑥.
- consuming food or water contaminated with cat feces or by contaminated environmental samples (such as fecal-contaminated soil or changing the litter box of a pet cat) ⑦.

- blood transfusion or organ transplantation ⁸.
- transplacentally from mother to fetus ⁹.

In the human host, the parasites form tissue cysts, most commonly in skeletal muscle, myocardium, brain, and eyes; these cysts may remain throughout the life of the host. Diagnosis is usually achieved by serology, although tissue cysts may be observed in stained biopsy specimens ¹⁰. Diagnosis of congenital infections can be achieved by detecting *T. gondii* DNA in amniotic fluid using molecular methods such as PCR ¹¹.

Life cycle image and information courtesy of DPDx (<http://dpd.cdc.gov/>).

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