



Toxoplasmosis in women

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Toxoplasmosis is a parasitic disease caused by the protozoan *Toxoplasma gondii*. The parasite infects most genera of warm-blooded animals. While anyone can be infected, women, particularly pregnant women, have specific concerns related to this.

In the United States it is estimated that 22.5% of the population 12 years and older have been infected with *Toxoplasma*. In various places throughout the world, it has been shown that up to 95% of some populations have been infected with *Toxoplasma*. Infection is often highest in areas of the world that have hot, humid climates.

- Classification

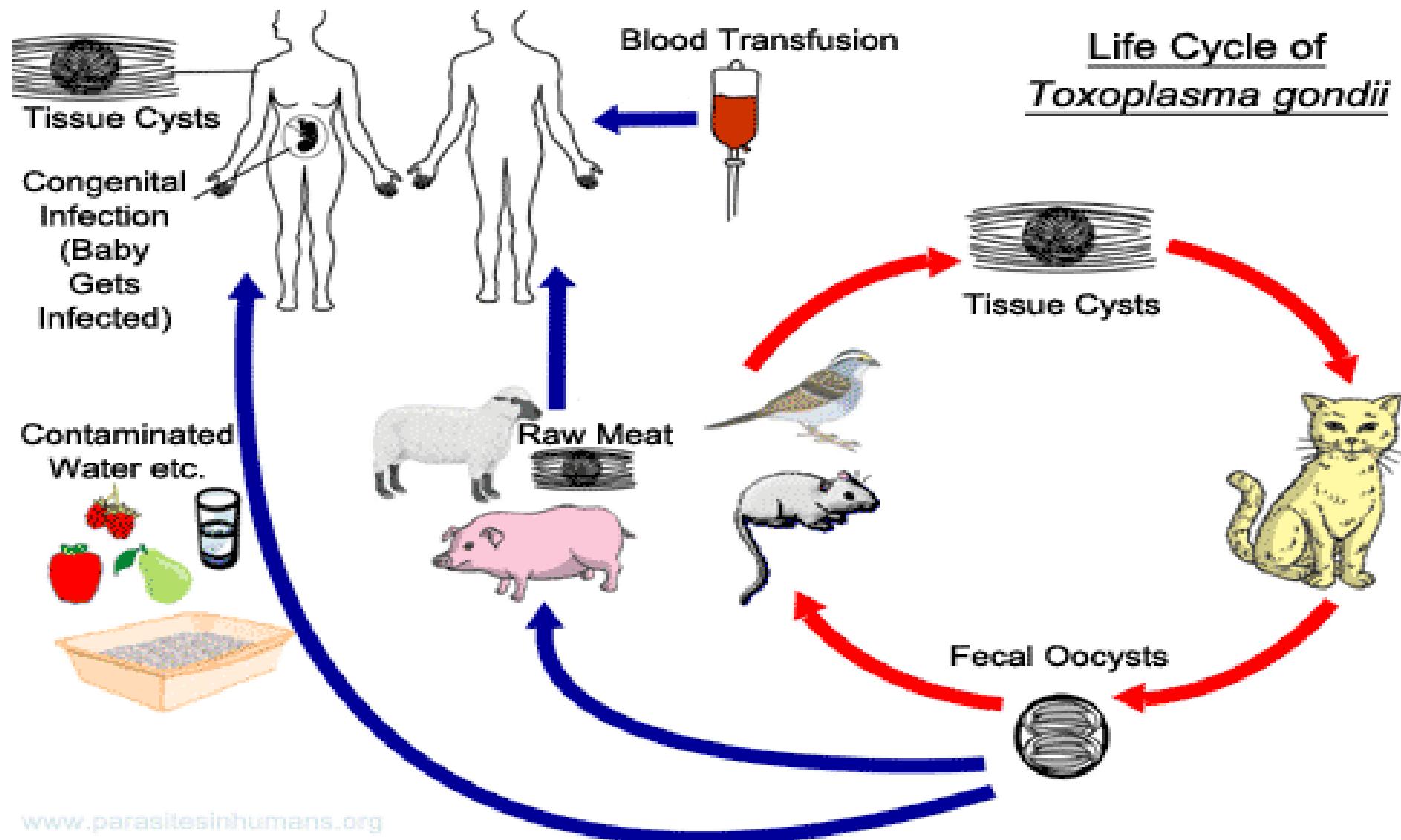
- Phylum: *Apicomplexa*
- Family: *Sarcocystidae*
- Subfamily: *Toxoplasmatinae*
- Genus: *Toxoplasma*
- Species: *T. gondii*

Signs and Symptoms

1. Toxoplasmosis in an otherwise healthy person may have no symptoms or only a few swollen glands usually in the patient's neck.
2. Toxoplasmosis in a person with a weakened immune system may only have symptoms of swollen glands, or in the case of an infection that attacks the brain and nervous system, the symptoms may include fever, headache, psychosis, and problems with vision, speech, movement, or thinking.

Life cycle

Life Cycle of *Toxoplasma gondii*



Transmission

- blood transfusion or organ transplantation (very rare)
- consuming undercooked, infected meat (especially lamb, pork and venison)
- ingesting water, soil (for example, putting dirty fingers in your mouth) or anything else that has been contaminated with cat feces
- mother-to-child transmission. A pregnant woman, who has just been infected with *Toxoplasma gondii* can pass the infection to her unborn baby (congenital infection). She might not have any symptoms, but the unborn child might suffer and develop disease.

- **Sources:**

Toxoplasma gondii can be transmitted through:

- Consuming undercooked or raw meat.
- Ingesting oocysts from contaminated food or water.
- Handling cat litter or soil where cats have defecated.

symptoms

- Many people with toxoplasmosis do not experience symptoms. However, some may experience:
 - Flu-like symptoms (such as fever, fatigue, headache, and muscle pain).
 - In severe cases, especially in immunocompromised individuals, it can cause complications such as encephalitis.

Children born with Toxoplasmosis may show symptoms including:

- Fever
- Swollen glands
- Jaundice
- An unusually large or small head
- Rash
- Bruises or bleeding under the skin
- Anemia
- Enlarged liver or spleen
- Mental retardation
- Hearing loss
- Vision problems (toxoplasmosis of the eye)



Acute toxoplasmosis

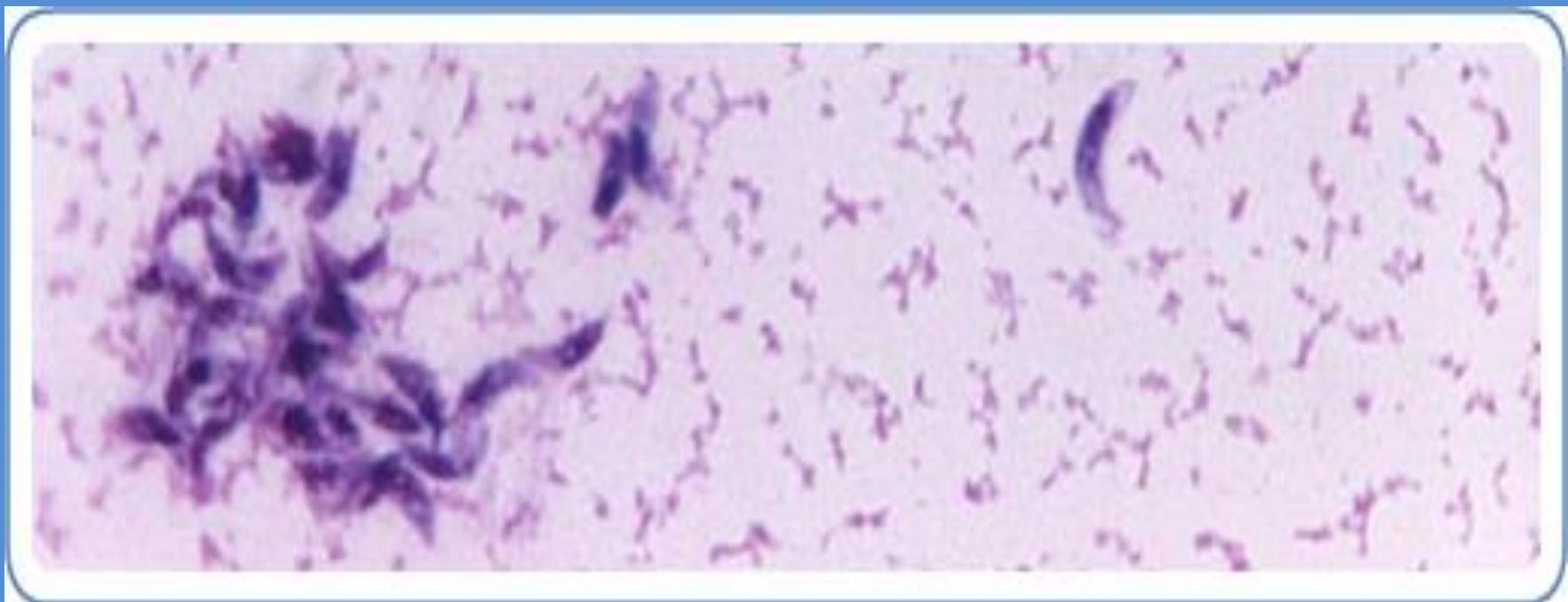
During acute toxoplasmosis, symptoms are often influenza-like: swollen lymph nodes, or muscle aches and pains that last for a month or more. Rarely will a human with a fully functioning immune system develop severe symptoms following infection. Young children and people, such as those with HIV/AIDS, those taking certain types of chemotherapy, or those who have recently received an organ transplant, may develop severe toxoplasmosis. This can cause damage to the brain or the eyes. Infants infected via placental transmission may be born with either of these problems, or with nasal malformations, although these complications are rare in newborns. The toxoplasmic trophozoites causing acute toxoplasmosis are referred to as Tachyzoites, and are typically found in bodily fluids.

Latent toxoplasmosis

It is easy for a host to become infected with *Toxoplasma gondii* and develop toxoplasmosis without knowing it. In most immunocompetent people, the infection enters a latent phase, during which only bradyzoites are present forming cyst in nervous and muscle tissue. Most infants who are infected while in the womb have no symptoms at birth, but may develop symptoms later in life

Morphology

- The intracellular parasites (tachyzoite) are $3 \times 6 \mu$, crescent shaped organisms that are enclosed in a parasite membrane to form a cyst measuring 10-100 μ in size. Cysts in cat feces (oocysts) are 10-13 μ in diameter



Diagnosis

- ***Serologic testing**, Blood tests can be performed to detect antibodies against Toxoplasma. The presence of IgM antibodies suggests a recent infection, while IgG antibodies indicate past exposure.
- ***direct observation of the parasite**
- ***Molecular techniques**

Treatment

In most cases, there is no treatment required for toxoplasmosis. If one develops acute toxoplasmosis, it requires medications such as pyreimethamine or sulfadiazine. Pregnant women may be given spiramycin to prevent the infection being transmitted to their unborn child.

Prevention

- Pregnant women can take precautions to reduce the risk of infection:
 - Cook meat thoroughly.
 - Wash hands and surfaces that come into contact with raw meat.
 - Avoid changing cat litter or ensure to use gloves and wash hands thoroughly afterward.
 - Avoid drinking untreated water.



Thank you