



## Toxoplasmosis

### What is toxoplasmosis?

Toxoplasmosis is a systemic disease caused by *Toxoplasma gondii* (*T. gondii*), a coccidian protozoan. In humans, most infections are asymptomatic. Symptoms similar to infectious mononucleosis (e.g., swollen glands, fever, sore throat, and/or a rash) are occasionally observed. When an immune response develops, the concentration of parasites in the body decreases, but viable *T. gondii* cysts remain in the tissues. These tissue cysts may reactivate if the immune system becomes compromised. Immunocompromised people experience a more severe form of the disease, which can include encephalitis (inflammation of the brain). Also, women who contract the disease during pregnancy may transmit the parasite to the fetus. Congenital infections may cause fetal brain and ocular lesions and, in a small percentage, death.

Susceptibility to infection is universal, but immunity is readily acquired. Duration and degree of immunity are unknown but assumed to be long lasting or permanent; antibodies persist for years, probably for life. Patients undergoing cytotoxic or immunosuppressive therapy or patients with AIDS are at high risk of developing illness from reactivated infection.

The incubation period (time from exposure to onset of symptoms) for humans is 1 to 4 weeks, usually 7 to 14 days. Diagnosis is based on clinical signs and supportive serologic results. Rising antibody levels are indicative of active infection. High antibody levels may persist for years with no relation to active disease.

The definitive hosts of *T. gondii* are cats and other felines, which acquire infection mainly from eating infected mammals (especially rodents) or birds or, rarely from feces of other infected cats. **Only felines** harbor the parasite in the intestinal tract where the sexual stage of its life cycle takes place, which results in the excretion of the oocysts in feces for 10 to 20 days or, rarely, longer. The intermediate hosts of *T. gondii* include sheep, goats, rodents, swine, cattle, chickens and birds; all may carry an infective stage (cystozoite or bradyzoite) of *T. gondii* encysted in tissue, especially muscle and brain. Tissue cysts remain viable for long periods, perhaps for the life of the animal.

### **Am I at risk of acquiring toxoplasmosis (the disease that can be caused by infection with *Toxoplasma*)?**

Infections may be acquired by contact with infected cat feces, eating raw or undercooked infected meat (pork or mutton, more rarely beef) containing tissue cysts, or by the ingestion of infective oocysts in food or water contaminated with feline feces. The oocysts sporulate 1 to 5 days after shedding in the feces and are then infectious. Shedding in infected cats usually only occurs once in a lifetime, and the time of shedding lasts only 10 to 15 days. Toxoplasmosis is not directly transmitted from person to person except *in utero*.

Oocysts shed by cats may remain infective in water or moist soil for about a year. Cysts in the flesh of an infected animal remain infective as long as the meat is edible and uncooked.

**How can I protect myself against toxoplasmosis?**

Practice good personal hygiene with frequent hand washing. Cat feces must be disposed of daily, before sporulation of the oocysts can occur. Gloves must be worn when handling feces. immunocompromised or pregnant individuals should completely avoid contact with cat feces, unless they are known to have antibodies to toxoplasma.