



Toxoplasma gondii

Toxoplasma gondii is an obligate parasitic protozoan and the causative agent of toxoplasmosis. Although it is capable of infecting any warm-blooded animals (including humans) as intermediate hosts, the natural definite host is feline cats where the parasite is able to undergo full sexual reproduction. Human infection occurs through the ingestion of tissue cysts in raw or undercooked meats; food or water contamination of oocysts; cat faeces; transplacental transmission from mother to foetus or rarely through organ transplantation, contamination blood products or needle-stick injury.

There's a small risk during the lambing season of toxoplasmosis infection passing from sheep to humans, as the *T. gondii* parasite is sometimes found in the afterbirth and on newborn lambs after an infected sheep has given birth.

Exposure and infections are common worldwide (seropositivity ~20% in the UK) however *T. gondii* rarely causes disease apart from in congenitally acquired infections and in patients with cell mediated immunodeficiencies. In pregnancy toxoplasmosis can manifest causing miscarriages, stillbirths or congenital effects in the neonate. If the mother has previously been infected her immune system may control the infection, however, if she has not been previously exposed and contracts the infection during pregnancy the above complications will arise.

People with weakened immune systems such as HIV patients, post organ transplants, or receiving chemotherapy are most at risk of toxoplasmosis as their immune system cannot contain an infection or reactivation, and the parasite is able to spread to other parts of the body including eyes, heart, lungs and the brain. Ocular/retinal toxoplasmosis and encephalitis present high morbidity, particularly in new-borns where it can cause blindness. Service users may wish to refer samples to us for screening during pregnancy; to look for the organisms in CSF or eye samples; or to monitor for the parasite presence in the blood, particularly during immunocompromising treatment or prophylaxis.

UKAS accredited specimen types for *T. gondii* DNA detection are EDTA whole blood, CSF and amniotic fluid. Vitreous humour and aqueous humour are validated however the test is currently unaccredited for these specimens and therefore may be reported alongside other alternative samples with an appropriate caveat.