



# TOXOPLASMOSIS

1. **Agent:** *Toxoplasma gondii*, a protozoan parasite.

2. **Identification:**

a. **Symptoms:**

**Congenital:** May cause stillbirth or neonatal disease if pregnant woman is newly infected. Mother may be asymptomatic. Neonatal symptoms may be slight or generalized: hemorrhagic rash, jaundice, hemolysis, and hepatosplenomegaly. When acute phase occurs *in utero*, damage is concentrated in brain and eyes. Sequelae include convulsions, hydrocephaly, microcephaly, intracerebral calcifications, chorioretinitis, and ocular palsies.

**Acquired:**

**Immunocompetent Persons:**

Generally asymptomatic. Possible mild onset of flu-like symptoms involving tender lymph nodes and muscle aches.

May present as an acute febrile illness with rash, pneumonia, headache, lymphadenopathy, and meningoencephalitis. In chronic infections, retinitis with hazy vision may occur, usually in one eye. In pregnant women, clinical evidence of infection may manifest only in fetus or infant.

**Immunosuppressed Persons (including HIV disease):** May include cerebral signs, pneumonia, generalized skeletal muscle involvement, myocarditis, and maculopapular rash. May cause death.

b. **Differential Diagnosis:**

**Congenital:** Cytomegalovirus (CMV), syphilis, rubella, herpes simplex, herpes zoster.

**Acquired:** Other parasitic diseases with dissemination (e.g., trichinosis, ascariasis, strongyloidiasis); viral, fungal, or tuberculous meningoencephalitis; space-occupying brain lesions (e.g., lymphoma, meningioma); infectious mononucleosis (EBV or CMV).

c. **Diagnosis:** Serological studies, CT or MRI scan, brain biopsy, isolation of parasites from bodily fluids, molecular DNA techniques such as PCR, and clinical response to therapy in presence of positive serology.

3. **Incubation:** Incubation period is 5-23 days.

4. **Reservoir:** Cats, rodents, dogs, swine, cattle, sheep, goats, poultry, birds, and reptiles.

5. **Source:** Infected raw meat, cat feces, soil contaminated with animal feces, dust or vegetation.

6. **Transmission:** Transplacental infection; consumption of raw or undercooked meat; ingestion or inhalation of sporulated (infective) oocysts.

7. **Communicability:** Unknown. No evidence of person-to-person spread except transplacentally and only during primary infection of mother.

8. **Specific Treatment:** Most cases of acquired infection do not require therapy. When indicated, diethylcarbamazine, anthelmintics, or combined therapy with sulfadiazine or clindamycin and pyrimethamine (Daraprim®). In pregnant women, spiramycin is commonly used; the addition of pyrimethamine and sulfadiazine should be considered when fetal infection is documented.

9. **Immunity:** Probably permanent.

## REPORTING PROCEDURES

1. **Reportable.** (Section 2500, *California Code of Regulations*.)



2. **Report Form:** [OUTBREAK / UNUSUAL DISEASE REPORT FORM \(CDPH 8554\)](#).

3. **Epidemiologic Data:**

- a. Contact with animals or their feces, especially cats.
- b. Ingestion of raw or undercooked meats.
- c. Type of cat food (raw or cooked meat, or prepared dry food).
- d. Receipt of organ from Toxoplasma-positive donor

**CONTROL OF CASE, CONTACTS & CARRIERS**

Note: Investigate only IgM positive and congenital cases. If the case is a newborn baby, confirm that it was actually diagnosed by a physician and is IgM positive. Investigate within 7 days.

**CASE:** Isolation: None.

**CONTACTS:** No restrictions.

**CARRIER:** Persons chronically infected with *T. gondii* are at risk of active disease if the cellular immune system becomes suppressed (e.g., cancer, cancer chemotherapy or radiation therapy, HIV disease, high dose corticosteroids). Persons with cancer or HIV should be screened for toxoplasma IgG; if reactive, prophylaxis is indicated. With HIV, use of a sulfa-containing prophylaxis such as trimethoprim-sulfamethoxazole for *Pneumocystis* prevention appears to protect against reactivation of *Toxoplasma* as well.

**PREVENTION-EDUCATION**

1. Avoid eating raw or undercooked meat or consuming unpasteurized dairy products

2. Avoid feeding pets with raw meat products.
3. If pregnant, avoid outdoor cats and their litter boxes.
4. Dispose of cat feces and litter daily (cysts require 1-5 days to become infective)
5. Use good hand washing techniques after handling raw meat, cat litter boxes, and cats.
6. Wear gloves when having contact with soil and sand.
7. Avoid drinking untreated water.

**DIAGNOSTIC PROCEDURES**

Clinical and epidemiological histories are required to aid the laboratory in test selections.

**Serology:** Paired sera required on suspected acute cases. For suspected congenital cases, blood from the mother and infant are required as they are tested in parallel.

**Container:** Serum separator tube (SST, red/gray top vacutainer tube).

**Laboratory Form:** [Test Requisition and Report Form H-3021](#)

**Examination Requested:** Toxoplasmosis Serology.

**Material:** Whole clotted blood.

**Amount:** 8-10 ml.

**Storage:** Refrigerate.

**Remarks:** Collect first blood specimen as early as possible. Collect the second specimen approximately 2 weeks after the first. Send each specimen as it is collected. Do not store.