CONDITION

Toxoplasmosis

Toxoplasmosis is an infection caused by a parasite that is usually mild but can seriously affect the eyes, brain, or pregnancy.

WHAT IT IS
Infection caused by the Toxoplasma gondii parasite

BODY SYSTEM
Whole body, especially eyes, brain, and unborn baby

MAIN SYMPTOMS
Usually none, fever, swollen lymph nodes, muscle aches

WHAT CAUSES IT
Infection with a microscopic parasite

HOW IT IS DIAGNOSED
Antibody tests and PCR; eye examination for ocular infection

MAIN TREATMENT
Observation or combination antiparasitic medicines

CAN IT BE CURED?
Sometimes - active infection treated, dormant cysts may remain

IS IT AN EMERGENCY?
Sometimes - seizures, confusion, or sudden vision loss

LONG-TERM OUTLOOK
Usually excellent; greater risks with weak immunity or congenital infection

Overview

Toxoplasmosis is an infection caused by Toxoplasma gondii , a microscopic parasite. The parasite can infect people and many animals.

Most people with a healthy immune system have no symptoms or develop a mild, flu-like illness. After the first infection, the parasite can remain inactive inside small tissue cysts, often in muscle, the brain, or the eyes. These cysts usually cause no problems.

Toxoplasmosis matters most during pregnancy, in babies infected before birth, and in people with a severely weakened immune system. In these situations, it can affect the brain, eyes, lungs, or other organs.

Eye infection, called ocular toxoplasmosis, can also occur in otherwise healthy people. It

causes inflammation in the retina, the light-sensitive layer at the back of the eye.

Toxoplasmosis does not usually spread through everyday contact. Important routes include undercooked meat, contaminated soil or water, and contact with cat feces containing the parasite. A pregnant person can also pass a new infection to the developing baby.

Symptoms

Most people do not know they have been infected. When symptoms occur in someone with a healthy immune system, they may begin several days or weeks after exposure and can resemble a mild viral illness.

Common symptoms include:

These symptoms often improve without treatment, although swollen lymph nodes or tiredness may last for several weeks.

Ocular toxoplasmosis may cause blurred vision, eye pain, redness, sensitivity to light, or new floaters. Floaters look like moving dots, threads, or shadows. Symptoms often affect one eye, but both eyes can be involved.

In people with severely weakened immunity, toxoplasmosis can become active in the brain. Symptoms can include persistent headache, fever, confusion, weakness on one side, poor coordination, seizures, or changes in alertness. Lung involvement may cause cough, fever, chest discomfort, or shortness of breath.

A baby infected before birth may have no obvious symptoms at delivery. Others may have eye inflammation, fluid around the brain, an unusually small or large head, seizures, jaundice, or an enlarged liver or spleen. Vision, hearing, learning, or movement problems can sometimes appear later.

- Swollen lymph nodes, especially in the neck
- Fever, tiredness, or headache
- Muscle aches
- Sore throat

Causes and risk factors

Toxoplasmosis begins when the parasite enters the body. This may happen through:

Cats are part of the parasite's life cycle, but touching or owning a cat does not by itself cause

toxoplasmosis. Cats usually shed the parasite in their feces for a limited time after first becoming infected. The parasite generally needs time in the environment before it becomes infectious.

Risk is higher for people who eat raw or undercooked meat, garden without gloves, or have contact with contaminated soil. It is also higher in places where untreated water may contain the parasite.

People with advanced HIV, certain cancers, organ or stem-cell transplants, or medicines that strongly suppress immunity have a greater risk of severe illness. This often results from an old infection becoming active again.

A new infection during or shortly before pregnancy may reach the developing baby. Transmission is more likely later in pregnancy, but an infection earlier in pregnancy can have more serious effects. Previous infection usually provides protection, although reactivation can occur if immunity becomes severely weakened.

- Eating raw or undercooked meat containing tissue cysts
- Eating unwashed produce or food contaminated by raw meat
- Swallowing contaminated soil or water
- Handling cat litter or soil containing infected cat feces, then touching the mouth
- Transmission to a developing baby during a new infection in pregnancy
- Rarely, an infected organ transplant or blood transfusion

Diagnosis

Blood tests can look for antibodies, which are proteins the immune system makes after infection. An IgG antibody usually shows that infection happened at some point. An IgM antibody may suggest a recent infection, but it can remain positive for a long time and can occasionally be misleading.

If timing matters, especially during pregnancy, results may need confirmation in a specialist laboratory. Repeat testing or an IgG avidity test may help estimate whether infection is recent. Avidity measures how strongly antibodies attach to the parasite.

Polymerase chain reaction, or PCR, detects the parasite's genetic material. It may be used on amniotic fluid when fetal infection is a concern, or on other body fluids in selected cases. Testing in pregnancy needs careful interpretation before major decisions are made.

Ocular toxoplasmosis is mainly diagnosed through a detailed eye examination. Retinal

photographs or scans may help show inflammation and scarring. Fluid from the eye is tested only when the diagnosis remains uncertain.

For possible brain infection, evaluation may include brain imaging with MRI or CT, blood tests, and assessment of the response to treatment. A tissue sample, called a biopsy, is occasionally needed when the findings are unclear.

Newborn testing may include antibody tests, PCR, eye examinations, hearing checks, brain imaging, and examination of fluid around the brain and spinal cord.

Treatment and management

Healthy people with mild symptoms often recover without medication. Treatment may be considered when symptoms are severe, prolonged, or affecting an organ.

When treatment is needed, it usually combines medicines that stop the parasite from multiplying. A common combination includes pyrimethamine and sulfadiazine with folinic acid, also called leucovorin. Folinic acid helps protect the bone marrow from pyrimethamine's effects. Other combinations may be used when these medicines are unsuitable or unavailable.

Blood counts and liver or kidney function may need monitoring during treatment. The length and choice of treatment are different for eye infection, brain infection, pregnancy, and congenital infection.

Active ocular toxoplasmosis may be treated when inflammation threatens vision or causes significant symptoms. Anti-inflammatory steroid medicine is sometimes added after antiparasitic treatment has started. Steroids like prednisone or hydrocortisone should not be used alone for active toxoplasmosis because they reduce immune activity.

Treatment during pregnancy is managed by specialists. The medicine selected is influenced by the stage of pregnancy and whether fetal infection is suspected or confirmed. Availability and recommended practice also differ between countries.

Babies with congenital toxoplasmosis generally need prolonged specialist treatment and follow-up. People with severely weakened immunity may need treatment for active infection followed by ongoing suppressive medicine until their immune system has recovered enough.

Treatment can control active parasite growth and reduce tissue damage. It may not remove every inactive tissue cyst, so recurrence is possible, particularly in the eye or when immunity remains weak.

Complications

Serious complications are uncommon in people with healthy immune systems.

Ocular toxoplasmosis can leave retinal scars. A scar near the centre of vision may cause lasting sight loss. Inflammation can return months or years later.

Brain infection can cause seizures, weakness, problems with speech or coordination, reduced alertness, and other lasting neurological problems. Severe lung or widespread infection can also occur in people with major immune suppression.

Congenital toxoplasmosis may affect vision, hearing, learning, movement, or brain development. Some children have no difficulties, while others develop problems later, which is why long-term follow-up is important.

Prevention

There is no vaccine for toxoplasmosis in people. Exposure cannot always be prevented, but food and hygiene measures can reduce the risk.

If you are pregnant or have a severely weakened immune system, avoid changing cat litter when possible. If this cannot be avoided, wear disposable gloves and wash your hands afterward. Change litter daily because the parasite generally takes more than a day to become infectious after being passed in feces.

Keep cats indoors and feed them commercial food or well-cooked food rather than raw meat. Avoid handling stray cats or kittens during pregnancy. There is usually no reason to give up a household cat.

- Cook meat thoroughly, and avoid tasting it before it is fully cooked
- Prevent raw meat and its juices from touching ready-to-eat food
- Wash knives, boards, dishes, and hands after handling raw meat
- Wash fruit and vegetables before eating them
- Wear gloves while gardening or handling soil, then wash your hands
- Avoid drinking untreated water or unpasteurized goat's milk

Living with it and what to expect

For most people with a healthy immune system, toxoplasmosis causes no lasting health problems. Mild symptoms usually settle, although tiredness or swollen glands can take longer

to disappear.

A positive IgG blood test often means an old, inactive infection rather than current illness. Inactive tissue cysts may remain for life without causing symptoms.

Ocular toxoplasmosis can return. Follow-up may include eye examinations to monitor inflammation, scars, and vision. New floaters, blurred vision, eye pain, or light sensitivity should be assessed promptly rather than waiting for a routine appointment.

People with major immune suppression may need regular blood tests, preventive medicine, or suppressive treatment. The risk of recurrence often falls if immune function improves, but any change in treatment should be medically supervised.

Children with congenital toxoplasmosis may need eye, hearing, developmental, and neurological checks over several years. This follow-up is useful even when a baby appeared healthy at birth because some effects emerge later.

When to get medical help

Arrange prompt medical assessment if you:

These situations do not always mean toxoplasmosis, but timely testing may be important.

Seek urgent same-day eye care for sudden changes in vision. Seek emergency help for a seizure, severe confusion, fainting, new one-sided weakness, difficulty speaking, severe breathing difficulty, or rapidly reduced alertness.

Routine follow-up is appropriate for reviewing blood-test results, monitoring treatment, checking medication side effects, or attending planned eye and developmental examinations.

- Are pregnant and may have eaten high-risk food or handled contaminated soil or litter
- Develop swollen glands or flu-like symptoms during pregnancy
- Have weakened immunity and develop fever, headache, cough, or new neurological symptoms
- Develop new blurred vision, floaters, eye pain, redness, or light sensitivity

Common questions

Can I get toxoplasmosis from petting my cat?

Petting a cat is not a usual route of infection. Risk comes from accidentally swallowing the parasite after contact with contaminated feces, litter, or soil. Washing your hands after

handling litter and before preparing food lowers this risk.

Can I catch toxoplasmosis from another person?

It does not normally spread through coughing, touching, kissing, or sex. It can pass from a pregnant person to the developing baby. Transmission through donated organs or blood is possible but rare.

Does a positive toxoplasmosis test mean I am currently ill?

Not necessarily. A positive IgG test often shows a past infection. IgM may suggest a recent infection, but it cannot reliably date the infection by itself. The result must be interpreted alongside symptoms, previous results, and confirmatory testing.

Can toxoplasmosis go away on its own?

Mild symptoms in a healthy person often resolve without treatment. The parasite may remain inactive in tissue cysts afterward. Active infection affecting the eyes, brain, pregnancy, or a person with weak immunity needs specialist assessment.

Can toxoplasmosis come back?

Yes. Ocular inflammation can recur, and dormant infection can reactivate if the immune system becomes severely weakened. Most people with healthy immunity never experience reactivation.

Can I have a healthy pregnancy after toxoplasmosis?

Many people with a past infection have healthy pregnancies. The main concern is a new infection during or shortly before pregnancy. Testing can be complex, so suspected recent infection should be assessed promptly and confirmed carefully.

Sources

- Centers for Disease Control and Prevention: About Toxoplasmosis
- Centers for Disease Control and Prevention: Clinical Care of Toxoplasmosis
- Centers for Disease Control and Prevention, DPDx: Toxoplasmosis
- NIH ClinicalInfo: Toxoplasma gondii Encephalitis-Adult and Adolescent Opportunistic Infections Guidelines
- Robert-Gangneux F, Dardé ML. Epidemiology of and Diagnostic Strategies for Toxoplasmosis. Clinical Microbiology Reviews. 2012;25(2):264-296



- Montoya JG, Liesenfeld O. Toxoplasmosis. The Lancet. 2004;363(9425):1965-1976 16412-X)