TEST

Toxoplasma blood test

A toxoplasma blood test checks for antibodies made in response to the Toxoplasma gondii parasite.

WHAT IT MEASURES
Antibodies made against the Toxoplasma gondii parasite

SAMPLE
Blood from a vein

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually under 10 minutes

RESULTS IN
Usually 1-3 days; longer for confirmation, varying by laboratory

USED FOR
Diagnosing recent or past infection and assessing exposure

MAIN LIMITATION
IgM may persist or falsely suggest recent infection

Overview

A toxoplasma blood test looks for antibodies against Toxoplasma gondii . This is a microscopic parasite that can infect people and animals. Infection is called toxoplasmosis.

Antibodies are proteins made by your immune system after it meets an infection. The test commonly measures two types, called IgG and IgM.

IgG usually appears after infection and can remain detectable for life. It generally shows that you have been exposed at some point. IgM may appear earlier, but it can remain positive for many months and sometimes produces a false-positive result.

The blood test does not usually detect the parasite itself. It also cannot always determine exactly when an infection happened. Additional blood tests or a test that looks for the parasite's genetic material may be needed.

Why the test is ordered

The test may help investigate symptoms or findings that could be related to toxoplasmosis. Many infections cause no symptoms. When symptoms occur, they can resemble other illnesses and may include swollen lymph nodes, fever, tiredness or muscle aches.

Testing is particularly important when the timing of an infection could affect care. Examples include suspected infection during pregnancy, certain eye problems, or illness in someone with a weakened immune system.

A clinician may order the test to:

Routine screening during pregnancy is not recommended or offered everywhere. Local practice and your individual circumstances affect whether testing is useful.

- Look for evidence of a recent or past infection
- Investigate symptoms that might have several possible causes
- Assess possible infection during pregnancy
- Check previous exposure before or during immune-suppressing treatment
- Support an investigation of inflammation inside the eye

Who should have the test

You may be offered testing if you are pregnant and have symptoms, a suspected exposure, or an ultrasound finding that needs further investigation. Eating undercooked meat or accidentally swallowing contaminated soil can lead to exposure. Contact with cats alone does not mean that infection has occurred.

Testing may also be considered if your immune system is weakened by HIV, an organ transplant, cancer treatment or immune-suppressing medicine. In these situations, a previous infection can sometimes become active again.

An eye specialist may request testing when examining inflammation at the back of the eye. The blood result must be considered alongside the eye examination because a positive IgG result is common in people with past exposure and does not prove that toxoplasmosis caused the eye problem.

How to prepare

You do not need to fast. You can usually eat, drink water and take your usual medicines before the blood draw.

Tell the clinician ordering the test if you:

Some laboratory methods can be affected by high-dose biotin. Do not stop prescribed medicine or supplements unless the clinician responsible for them tells you to.

If other blood tests are being collected at the same appointment, their preparation instructions may be different.

- Are pregnant or could be pregnant
- Have a weakened immune system
- Recently received a blood transfusion or antibody-containing blood product
- Take immune-suppressing medicine
- Use high-dose biotin supplements

What happens during the test

A healthcare professional places a small needle into a vein, usually in your arm. Blood is collected into a tube and sent to a laboratory.

The needle is removed, and pressure is applied to the area. The collection itself usually takes only a few minutes.

The laboratory may test for IgG, IgM or both. If a result suggests possible recent infection, the sample may be sent to a specialist reference laboratory for confirmation. This can extend the wait for results.

Understanding your results

The laboratory report gives its own cutoffs for negative, borderline and positive results. Ranges and interpretation vary by laboratory, age, sex, pregnancy status, medicines and clinical context.

Common result patterns include:

When recent infection matters, especially during pregnancy, the laboratory may perform an IgG avidity test. Avidity describes how strongly IgG antibodies bind to the parasite. High avidity early in pregnancy can help rule out infection acquired recently. Low avidity does not prove recent infection because it can persist for months.

A rising IgG level in samples taken several weeks apart may support recent infection. Results must be interpreted with the dates of both samples and the methods used.

- IgG negative and IgM negative: No antibodies were detected. This usually means no previous infection, but a very recent infection may not yet be detectable.
- IgG positive and IgM negative: This usually reflects an infection acquired in the past.
- IgM positive: This does not prove a recent infection. IgM can persist long after infection and can also be falsely positive.
- Borderline or indeterminate: The result is too close to the laboratory cutoff to classify reliably. Testing another sample may help.

What affects the results

Timing is one of the most important influences. Antibodies take time to develop, so testing soon after exposure can be negative even if infection occurred. A later sample may be recommended.

IgM can stay detectable for months or, occasionally, longer. A positive result may therefore appear recent when the infection is not. Nonspecific antibody reactions can also cause false-positive IgM results.

Other factors include:

Ordinary food, coffee, the time of day and routine exercise are not known to meaningfully alter toxoplasma antibody levels.

- A weakened immune system: Your body may make fewer antibodies, producing a negative or unclear result despite infection.
- Pregnancy: Pregnancy does not automatically make the test positive, but the timing and consequences of possible infection change how results are assessed.
- Recent transfusion or antibody products: Donated antibodies can occasionally complicate interpretation.
- A baby's age: Maternal IgG crosses the placenta, so a newborn's positive IgG may come from the mother rather than from infection in the baby.
- Different test methods: Results near a cutoff may not agree between laboratories.
- Immune-suppressing medicines: These can reduce the antibody response.

Accuracy and limitations

The test is useful for showing previous exposure, but no single antibody result can reliably date

an infection.

IgM testing is the main source of misleading results. Some assays may report IgM when there has been no recent infection. Confirmatory testing at a reference laboratory is particularly important when a positive result would affect pregnancy care or other major decisions.

The test can also miss infection if it is performed before antibodies develop. It may be less reliable in people with severely weakened immune systems because they may not produce a typical antibody response.

A different test may be more appropriate in some situations. Polymerase chain reaction, or PCR, looks for parasite DNA. Depending on the clinical question, it may be performed on amniotic fluid, spinal fluid, eye fluid, blood or tissue. PCR can support diagnosis but can still miss infection when little parasite DNA is present.

For possible infection in a newborn, maternal IgG makes ordinary antibody testing difficult to interpret. Specialist testing may include IgM, IgA, PCR and follow-up IgG measurements. Brain imaging, an eye examination or a tissue sample may be more informative when specific organs are affected.

Risks and complications

A blood draw may cause brief pain, a small bruise or minor bleeding at the needle site. Some people feel light-headed or faint, but serious complications are uncommon.

What happens next

No further testing may be needed when the result clearly shows past exposure and there is no concern about recent infection.

A negative result taken soon after a possible exposure may be repeated later. A positive or uncertain IgM result may be checked with another method, an IgG avidity test or a second blood sample.

If you are pregnant, contact your maternity team promptly rather than waiting for a routine appointment if you receive a positive or unclear result. The result does not by itself show that the fetus is infected.

Seek urgent medical assessment for new blurred vision, floaters, eye pain or loss of vision. If your immune system is weakened, severe headache, confusion, a seizure, new weakness or difficulty breathing requires emergency care.

Common questions

Can I drink coffee before the test?

Yes. Coffee does not affect toxoplasma antibody testing. Follow any fasting instructions given for other tests being collected at the same time.

Does the time of day matter?

No. IgG and IgM do not normally change enough during the day to require a timed appointment.

Can I exercise beforehand?

Yes. Usual exercise is not known to meaningfully affect the result. If exercise makes blood draws more difficult because you are dehydrated, drink water beforehand.

How soon after exposure can I be tested?

Testing too early can miss infection because antibodies have not yet developed. The appropriate timing for a repeat sample depends on the exposure date and why testing is needed.

Does a positive test mean my baby is infected?

No. A positive maternal result shows antibodies in your blood, not whether the fetus is infected. Confirmatory blood tests and, in selected cases, PCR testing of amniotic fluid may be considered.

Does a positive IgG result mean I need treatment?

Not usually by itself. IgG commonly represents past infection. Decisions about further testing or treatment depend on symptoms, pregnancy, immune health and evidence about when infection occurred.

Sources

- Centers for Disease Control and Prevention. Clinical Overview of Toxoplasmosis
- Centers for Disease Control and Prevention. DPDx: Toxoplasmosis-Laboratory Diagnosis
- ARUP Consult. Toxoplasma gondii-Toxoplasmosis: Choose the Right Test
- National Institutes of Health. Toxoplasma gondii Encephalitis: Adult and Adolescent Opportunistic Infection Guidelines



- Montoya JG, Remington JS. Management of Toxoplasma gondii infection during pregnancy. Clinical Infectious Diseases . 2008;47(4):554-566. doi:10.1086/590149
- Peyron F, L'ollivier C, Mandelbrot L, et al. Maternal and congenital toxoplasmosis: diagnosis and treatment recommendations of a French multidisciplinary working group. Pathogens . 2019;8(1):24. doi:10.3390/pathogens8010024