TEST

TORCH screen

A TORCH screen checks for selected infections that may affect a pregnancy or newborn.

WHAT IT MEASURES
Antibodies or genetic material from selected pregnancy-related infections

SAMPLE
Usually blood; sometimes urine, saliva, amniotic fluid, or swabs

FASTING NEEDED?
No

HOW LONG IT TAKES
About 5 to 10 minutes for a blood draw

RESULTS IN
Usually days; specialized confirmation takes longer, varying by laboratory

USED FOR
Targeted diagnosis of infections affecting pregnancy or newborns

MAIN LIMITATION
Bundled results can mislead without targeted timing and interpretation

Overview

A TORCH screen is not one standard test. It is a name used for a group of tests for infections that can pass during pregnancy or around birth. These infections can sometimes affect fetal or newborn development.

The letters traditionally stand for:

The exact infections included vary between laboratories and hospitals. Some laboratories no longer offer a single bundled panel because each infection has different testing needs.

Most TORCH tests look for antibodies , which are proteins made by the immune system. IgG antibodies often reflect an older infection or immunity. IgM antibodies may appear with a recent infection, but they can persist or be falsely positive.

Other tests look directly for the infection's genetic material using PCR. PCR may be performed on blood, urine, saliva, a swab, amniotic fluid, or spinal fluid, depending on the infection and clinical situation.

- T: toxoplasmosis

- O: "other" infections, which may include syphilis, HIV, hepatitis B, chickenpox, or parvovirus B19
- R: rubella, also called German measles
- C: cytomegalovirus, or CMV
- H: herpes simplex virus, or HSV

Why the test is ordered

A clinician may order selected TORCH tests when there is a specific concern about infection during pregnancy or in a newborn.

During pregnancy, testing may follow an illness, a known exposure, or an ultrasound finding that could have several possible causes. Examples include suspected fetal growth problems, fluid around organs, or changes involving the brain or liver. These findings do not prove that an infection is present.

For a newborn, testing may be considered after an abnormal prenatal result or symptoms such as jaundice, an unusual rash, an enlarged liver or spleen, a smaller-than-expected head size, hearing concerns, or eye problems. Many of these findings also occur for reasons unrelated to TORCH infections.

A broad panel can produce confusing results. For this reason, targeted tests chosen for the particular exposure, symptoms, and timing are often more useful than ordering every test together.

Who should have the test

A TORCH screen is not routinely needed for every pregnant person or newborn. Routine prenatal testing for infections such as HIV, hepatitis B, and syphilis is usually arranged separately according to local maternity care guidance.

Targeted testing may be appropriate if:

Rubella IgG is commonly checked to assess immunity. This is different from testing whether a fetus or newborn has rubella.

If you are pregnant and have had a significant infection exposure, contact your maternity team promptly. Most exposures are not emergencies, but the timing of assessment can affect which test is useful.

- You develop an illness or rash during pregnancy
- You have close contact with a person who has a relevant infection
- Prenatal imaging raises concern about fetal infection
- A newborn has findings that could be caused by congenital infection
- An earlier antibody result needs confirmation or timing
- An adoption, immigration, or incomplete medical history leaves important gaps

How to prepare

No fasting is usually needed. You can normally eat, drink water, and take your usual medicines before a blood test.

Tell the person arranging the test:

Bring previous laboratory reports if available. Comparing results from different dates can be more informative than interpreting one result alone.

Preparation is different if amniocentesis, a lumbar puncture, or another procedure is planned. Your care team should provide instructions for that specific procedure.

- When symptoms or exposure began
- Which vaccines you have received and when
- Whether you recently had a blood transfusion or antibody treatment
- Which prescription medicines, supplements, or antivirals like acyclovir or oseltamivir you take
- Whether earlier TORCH-related tests were performed elsewhere

What happens during the test

For a blood test, a band is placed around your upper arm. The skin is cleaned, and a small needle collects blood into one or more tubes. The draw usually takes a few minutes.

A newborn may have blood collected from a vein or heel. Urine or saliva may also be collected, especially when testing for congenital CMV.

If there are blisters or sores, a swab may be used for herpes PCR. A clinician may recommend spinal fluid testing if a newborn could have an infection involving the brain or surrounding tissues.

During pregnancy, amniotic fluid may sometimes be tested to investigate fetal infection. This requires amniocentesis, in which a thin needle is guided through the abdomen using ultrasound. It is a separate procedure with its own preparation and risks.

Understanding your results

Results must be interpreted for each infection rather than as one overall "TORCH-positive" or "TORCH-negative" answer.

IgG positive often means you had the infection in the past or were vaccinated. It does not necessarily mean there is an active infection. For rubella, IgG commonly indicates immunity.

IgM positive can suggest a recent infection, but it does not confirm one by itself. IgM may remain detectable for months, react with another infection, or be falsely positive. Confirmation may involve repeating the test, using a different method, or checking antibody avidity.

Avidity describes how strongly IgG antibodies attach to their target. Higher avidity usually supports an older infection, while lower avidity may support a more recent one. Its meaning changes with the infection, pregnancy stage, and assay.

PCR detected means genetic material from the organism was found in that sample. It does not always show when infection occurred or how severely a fetus or newborn may be affected.

A negative result may mean there is no infection. It may also mean testing happened too early, the wrong sample was used, or the amount of organism or antibody was below the test's detection limit.

Reference ranges and interpretation vary by laboratory, age, sex, pregnancy status, medicines, and clinical context.

What affects the results

Timing is one of the biggest influences. Antibodies take time to develop after infection. A test performed soon after exposure can therefore be negative even when infection is developing.

Other factors include:

Breast milk can contaminate a newborn's saliva sample and produce a positive CMV result. A positive saliva test is therefore commonly confirmed using urine.

- Past infection or vaccination: IgG may remain positive for years
- Long-lasting IgM: IgM can stay positive after the recent infection has passed

- Cross-reactions: Antibodies to another infection may trigger a false-positive result
- Pregnancy: Immune responses can change, affecting antibody patterns
- Newborn age: Maternal IgG crosses the placenta and can remain in the baby's blood
- Reduced immune function: Antibody production may be delayed or weak
- Recent transfusion or immunoglobulin treatment: Donated antibodies can alter results
- Antiviral treatment: This may lower the amount of virus detected in some samples
- Sample site and collection: Saliva, urine, blood, and swabs are not interchangeable
- High-dose biotin supplements: These interfere with some antibody-testing systems

Accuracy and limitations

There is no single accuracy figure for a TORCH screen. Each infection, laboratory method, sample type, and testing time has a different chance of missing infection or producing a positive result when infection is absent.

Antibody panels can miss very recent infection because antibodies have not yet developed. They can also incorrectly suggest recent infection because IgM is prone to persistence and false-positive reactions.

Newborn IgG results are especially limited because maternal IgG crosses the placenta. A positive result may reflect the mother's antibodies rather than infection in the baby. Newborn IgM does not cross the placenta, but a negative IgM result still cannot reliably exclude every congenital infection.

For congenital CMV, PCR on saliva or urine collected within the first three weeks after birth is more useful than a general antibody panel for confirming infection present at birth. Testing later may not distinguish congenital infection from infection acquired after delivery.

For suspected neonatal herpes, PCR or culture from appropriate sites is more useful than HSV antibody testing. For possible fetal toxoplasmosis or CMV, amniotic-fluid PCR may be considered after specialist assessment.

A result cannot predict the degree of fetal or newborn impact by itself. Imaging, examination, hearing and eye assessments, and other laboratory tests may be needed.

Risks and complications

A blood draw may cause brief pain, a small bruise, or light-headedness. Serious complications

are uncommon.

Urine, saliva, and surface swabs do not usually cause harm. A swab of a sore may be briefly uncomfortable.

Amniocentesis and lumbar puncture have additional risks because they are invasive procedures. If either is recommended, you should receive separate information about why it is needed, what alternatives exist, and what warning signs to watch for afterward.

What happens next

If all targeted results are reassuring, no infection-specific follow-up may be needed. Your care team may still repeat a test if the first sample was collected too soon after an exposure.

An unexpected IgM or PCR result is often confirmed before conclusions are made. Follow-up may include a repeat blood sample, an avidity test, PCR from another specimen, ultrasound, or newborn hearing and eye checks.

Seek prompt advice from your maternity or newborn care team if you are pregnant and develop a new fever or rash after a relevant exposure, or if a newborn is feeding poorly, unusually sleepy, or jaundiced.

Emergency assessment is needed for a newborn who has trouble breathing, has a seizure, turns blue, is very difficult to wake, or has a fever during the first three months of life.

Common questions

Can I drink coffee before a TORCH blood test?

Yes. Fasting is not normally required, so plain or milky coffee usually does not affect the test. Follow any different instructions given for other blood tests being collected at the same appointment.

Does the time of day matter?

Usually not. The number of days or weeks since exposure, symptoms, birth, or vaccination matters much more than the time of day.

Can I exercise beforehand?

Normal activity does not usually change TORCH antibody results. There is generally no need to avoid exercise unless another planned test or procedure requires it.

Does a positive TORCH result mean my baby is infected?

Not necessarily. A positive maternal IgG commonly reflects past infection or immunity. IgM can be falsely positive, and newborn IgG may have crossed the placenta from the mother. Confirmation depends on the specific infection.

Why might I need another sample?

A repeat sample can show whether antibody levels are changing. Another sample type may also be better suited to the question, such as newborn urine for CMV or a blister swab for herpes.

How long will the results take?

Many antibody or PCR results return within several days. Confirmatory testing, avidity testing, or samples sent to a specialist laboratory can take longer.

Sources

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