TEST

Herpes viral culture of lesion

This test checks a sore or blister for live herpes simplex virus.

WHAT IT MEASURES
Live herpes simplex virus grown from a lesion swab

SAMPLE
Swab of fluid or cells from an active lesion

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually 5 to 10 minutes

RESULTS IN
Usually 2 to 7 days; laboratory timelines differ

USED FOR
Diagnosing and typing herpes simplex infection

MAIN LIMITATION
Often misses virus in older or healing lesions

Overview

A herpes viral culture checks a sore, blister, or ulcer for herpes simplex virus, usually called HSV. A healthcare professional collects fluid and cells from the lesion with a swab. The laboratory then tries to grow live virus from the sample.

There are two main types of herpes simplex virus: HSV-1 and HSV-2. Either type can affect the mouth, genitals, or nearby skin. If the culture is positive, the laboratory can usually identify which type is present.

Viral culture is now used less often than a molecular test called a nucleic acid amplification test, or NAAT. Polymerase chain reaction, known as PCR, is one type of NAAT. These tests look for the virus's genetic material and are more likely than culture to detect HSV, particularly in older or healing lesions.

A culture cannot tell when you acquired HSV, who it came from, or how often symptoms may return. It only tests the sampled lesion at that time.

Why the test is ordered

The test may be ordered to find out whether an active blister, sore, or ulcer contains HSV. Testing can be useful because herpes lesions may resemble irritation, ingrown hairs, mouth ulcers, shingles, syphilis, or other skin conditions.

A clinician may request culture to:

Typing the virus can help provide context about the chance of future genital outbreaks and symptom-free viral shedding. It does not predict exactly what will happen for an individual person.

- Help confirm HSV in an active lesion
- Identify whether HSV-1 or HSV-2 is present
- Investigate an unusual, severe, or persistent lesion
- Obtain live virus for further testing, such as antiviral resistance testing

Who should have the test

This test may be appropriate if you have a fresh blister, open sore, or ulcer that could be caused by HSV. The chance of finding the virus is highest when the lesion is new, moist, and has not started to crust or heal.

Testing may be especially important during a first suspected episode, during pregnancy, or when illness or medicines weaken the immune system. In these situations, prompt assessment can affect which tests and follow-up are appropriate.

A lesion culture is not a routine screening test when there is no lesion to swab. If a lesion has already healed, a clinician may discuss a type-specific HSV blood antibody test. That is a different test with different limitations, and it cannot prove that a particular past lesion was herpes.

How to prepare

You do not need to fast. Coffee, food, and normal physical activity do not affect the culture.

If possible, arrange testing while the lesion is still fresh. Do not delay care to wait for it to change or become more painful.

Avoid cleaning the lesion or applying creams, antiseptics, powders, or ointments immediately before the appointment unless you have been told to do so. These products may reduce the

amount of recoverable virus or make sampling more difficult.

Tell the healthcare professional if you are taking aciclovir, valaciclovir, famciclovir, or another antiviral medicine. Antiviral treatment can reduce the amount of live virus in a lesion. Do not stop prescribed medicine unless the prescriber tells you to.

Also mention if you are pregnant, could be pregnant, or have a weakened immune system.

What happens during the test

The healthcare professional examines the affected area and rubs a sterile swab over the lesion. For a blister, they may gently open its surface and collect fluid and cells from the base. Sampling the base is important because that is where infected cells are more likely to be found.

The swab is placed in a special transport container and sent to the laboratory. There, the sample is added to living cells that can support viral growth. If HSV grows, the laboratory confirms the virus and may identify it as HSV-1 or HSV-2.

Collection usually takes a few minutes. The swab may sting, particularly if the lesion is open or in a sensitive area.

Understanding your results

Results are usually reported as positive or negative rather than as a number.

A positive culture means HSV grew from the sample. This strongly supports HSV infection at the sampled site. The report may also state whether the virus is HSV-1 or HSV-2.

A negative culture means HSV did not grow. It does not always rule out herpes. The lesion may have contained too little live virus, particularly if it was old, crusted, healing, or recurrent. A negative result can also occur if antiviral treatment has already reduced viral shedding.

An inconclusive , invalid , or unsatisfactory result means the laboratory could not give a reliable answer. Another swab or a molecular test may be needed.

There is no universal numeric reference range for this test. Reporting methods vary by laboratory. Interpretation also considers your age, sex, pregnancy status, medicines, symptoms, lesion stage, and clinical context.

What affects the results

The condition of the lesion is the most important factor. Culture is most likely to detect HSV in a new fluid-filled blister. Detection becomes less likely after the blister breaks, crusts, or begins to heal.

Other factors include:

Food, coffee, exercise, kidney function, and a recent blood transfusion do not directly affect a lesion culture. Pregnancy does not by itself make the culture inaccurate, but it changes how a possible genital HSV infection is assessed and followed.

- Collection technique: Too little fluid or too few cells can cause a negative result
- Transport conditions: Delays or unsuitable temperatures can damage live virus
- Antiviral medicines: Treatment may lower the amount of virus available to grow
- Recent cleaning or topical products: These may reduce recoverable virus
- Intermittent shedding: HSV may not be present on the skin continuously
- The sampled site: A swab from the wrong lesion may not represent another affected area

Accuracy and limitations

A positive culture is generally reliable because the laboratory has grown and identified live HSV. False-positive results are uncommon, although specimen contamination, labeling errors, or other laboratory problems are possible.

The larger concern is a false-negative result. Culture can miss HSV even when it caused the lesion. This is particularly common with recurrent outbreaks and lesions that are already healing. A negative result therefore needs to be considered alongside the appearance and timing of the lesion.

NAAT or PCR is usually better at detecting HSV from a lesion because it can find small amounts of viral genetic material, including virus that is no longer able to grow in culture. If available, it is often the preferred lesion test.

Culture still has a role when live virus is needed for certain antiviral resistance tests. Blood antibody testing may be considered when no lesion is available, but it cannot determine whether HSV caused a specific sore. For suspected infection of the brain or nervous system, testing spinal fluid by PCR is more appropriate than lesion culture.

Risks and complications

The swab may cause brief pain, minor bleeding, or irritation. There are no usual whole-body risks from collecting the sample, and the discomfort generally settles quickly.

What happens next

If the result is positive, follow-up usually includes discussing the HSV type, treatment options, ways to reduce transmission, and what to do if symptoms return. A positive result does not show when the infection began.

If the result is negative but the lesion still looks suspicious, routine follow-up may include a repeat swab from a new lesion, preferably using NAAT or PCR. Another diagnosis may also need to be considered.

Contact your maternity or pregnancy care team promptly if you are pregnant and develop new genital blisters, sores, or burning pain, particularly near your due date.

Seek urgent assessment for a painful red eye, light sensitivity, or a change in vision. Seek emergency care for confusion, a seizure, severe headache with neck stiffness, or difficulty waking. These symptoms are not typical of an uncomplicated skin lesion but need immediate evaluation.

Common questions

Can I drink coffee before the test?

Yes. Coffee, food, and other drinks do not affect a herpes lesion culture.

Does the time of day matter?

No. The age of the lesion matters more than the time of day. Testing a fresh blister promptly gives culture the best chance of finding the virus.

Can I exercise beforehand?

Yes. Exercise does not directly affect the result. Avoid activity that rubs, opens, or contaminates the lesion before it is sampled.

Should I wash the area first?

Unless instructed otherwise, avoid washing the lesion or applying antiseptic immediately before testing. Normal gentle hygiene earlier in the day is unlikely to cause a problem.

Will the swab hurt?

It may sting or feel uncomfortable for a few seconds. Open genital or mouth lesions can be

especially sensitive.

Can a negative culture prove I do not have herpes?

No. Culture can miss HSV, especially in a crusted or healing lesion. A molecular test, repeat testing of a fresh lesion, or another type of assessment may be appropriate.

Sources

- Centers for Disease Control and Prevention. Genital Herpes, Sexually Transmitted Infections Treatment Guidelines, 2021
- ARUP Consult. Herpes Simplex Virus - HSV: Choose the Right Test
- World Health Organization. Guidelines for the management of symptomatic sexually transmitted infections, 2021
- LeGoff J, Péré H, Bélec L. Diagnosis of genital herpes simplex virus infection in the clinical laboratory. Virology Journal. 2014;11:83