



FACT SHEET: HERPES SIMPLEX TESTING

HSV SEROLOGY

The persistent nature of HSV infections, coupled with the presence of two HSV types that are common in the general population, can create confusion when interpreting HSV serology results. The following guidelines are intended to provide the most likely interpretation for several combinations of results:

If the **HSV-1** and **HSV-2** type-specific IgG results are **BOTH NEGATIVE**

There is no evidence of infection with either HSV type, unless the individual has been recently infected and is in the "window period" of infection where a detectable level of antibody has not yet developed. This "window period" can be as little as 2 weeks, but the average is about 1 month and over 90% of infected individuals become positive by 3 months (see HSV IgM serology below).

If the **HSV-1** type-specific IgG result is **POSITIVE** and the **HSV-2** is **NEGATIVE**

These results indicate infection with HSV-1, but if culture confirmed lesions are not present, the result cannot determine if the infection is oral or genital. Although oral infection is almost always HSV-1, 20% of genital infections are also caused by HSV-1. These results also indicate that there has not been an infection with HSV-2, unless the infection is in the "window period".

If the **HSV-1** type-specific IgG result is **NEGATIVE** and the **HSV-2** is **POSITIVE**

These results usually indicate a genital infection with HSV-2, because oral infection with this virus is rare. HSV-2 infection is also generally protective against subsequent HSV-1 infection.

If the **HSV-1** and **HSV-2** type-specific results are **BOTH POSITIVE**

These results indicate infection with both HSV types. The most likely cause of this is an HSV-1 oral infection during childhood, followed by an adult genital HSV-2 infection.

HSV IgM Serology

The HSV IgM serology test can be helpful during the "window period" of infection, as it tends to become positive before the IgG response. The HSV IgM test can become positive in as little as 5 days after exposure and then persists for 1-2 months. This test is not specific for either of the HSV types and cannot be used to differentiate between HSV-1 and HSV-2 infection. In a situation where the IgM test is positive and the type-specific IgG tests are negative a subsequent specimen collected at least 3 months after exposure, and then tested for HSV IgG type-specific antibodies, should reveal the herpes virus type that caused the infection. The IgM test can also be positive during reactivated infection. As a result, if IgG and

IgM antibodies are present at the same time, the IgM test will not be useful for determining if the infection is either primary or a reactivation.

HSV CULTURE

An HSV culture is the best test for definitive evidence of HSV infection and the identification of the HSV type (1 or 2) involved. While the test is highly specific for the identification of HSV (nearly 100% accurate), it does depend upon the collection of a specimen at the vesicular stage of infection when live virus is likely to be present. If a specimen is collected during that period, the virus can be identified by culture up to 90% of the time. If vesicles have not fully formed or are too old, the sensitivity of the test will decrease. As a result, the test should not be used to rule out HSV infection. In such cases, it might be helpful to perform an HSV serology panel either simultaneously or subsequent to the culture to determine the exposure history of the patient.

HSV DIRECT STAIN

Another option for detection of an HSV infection is an HSV direct stain. The test is not as specific or sensitive as a culture, but it can be performed in less than a day if a rapid turnaround is critical.

HSV by PCR

The HSV by PCR test is the best test for the detection of HSV in cerebrospinal fluid in cases of suspected herpes central nervous system infection or neonatal herpes. It also has better sensitivity than a culture for detection of herpes from other body sites, but the test is considerably more costly than a culture and is not well-established for that application.

TEST ORDERING

TEST NAME	TEST CODE	SPECIMEN	CPT CODE(s)
HSV type-specific IgG	9807	1 ml Serum, Refrigerate	86595, 86596
HSV 1 and 2 IgM	9933	1 ml Serum, Refrigerate	86694
HSV Serology Panel (IgG and IgM)	3403	1 ml Serum, Refrigerate	86595, 86596, 86694
HSV Culture (no typing of isolate)	2310	Vesicle Swab in M-4 Transport Media	87252, 87254
HSV Culture (with typing)	9529	Vesicle Swab in M-4 Transport Media	87252, 87254*
HSV Stain (DFA)	2293	Vesicle Swab in M-4 Transport Media	87273, 87274
HSV by PCR (real-time)	2309	Consult User Guide or Call Laboratory	87529

* If culture is positive, 87410 x 2 will be added for typing of the isolate.

Additional questions about Herpes testing at Doctors Laboratory, Inc. may be directed to Dr. David Dittmar at 305-556-2898.