TEST

Epstein-barr virus antibody test

A blood test that looks for immune-system antibodies showing recent or past Epstein-Barr virus infection.

WHAT IT MEASURES
Antibodies your immune system makes against Epstein-Barr virus

SAMPLE
Blood

FASTING NEEDED?
No

HOW LONG IT TAKES
About 5 minutes for a blood draw

RESULTS IN
Usually 1-3 days, varying by laboratory

USED FOR
Helping diagnose recent or past Epstein-Barr virus infection

MAIN LIMITATION
Timing can make early infection look antibody-negative

Overview

An Epstein-Barr virus antibody test is a blood test that looks for antibodies against Epstein-Barr virus, or EBV. Antibodies are proteins made by your immune system after it encounters a virus.

EBV is a common cause of infectious mononucleosis, also called mono or glandular fever. Many people are infected without typical symptoms. Antibody testing can help show whether an infection is recent, happened in the past, or has not been detected.

The test is often ordered as a panel that may include:

The results must be interpreted together. A single positive antibody does not always show when infection occurred.

- VCA IgM: an early antibody that usually disappears after a recent infection
- VCA IgG: appears early and usually remains for life
- EBNA IgG: usually develops several weeks or months after infection

- EA IgG: may rise during active infection but can remain detectable in healthy people

Why the test is ordered

The test may be ordered when symptoms suggest infectious mononucleosis, including fever, sore throat, swollen lymph nodes, marked tiredness, or an enlarged liver or spleen.

It may also be used when a rapid heterophile antibody test, sometimes called a Monospot test, is negative but EBV is still suspected. Heterophile tests can miss infection, particularly early in the illness and in younger children.

Testing may help clarify a previous result or document whether you have had EBV before. In specialist care, EBV testing can form part of an assessment before transplantation or when the immune system is weakened. Other tests, including EBV DNA testing, may be more useful in those situations.

Who should have the test

You may be offered this test if your symptoms and examination suggest mononucleosis but the cause is uncertain. It is most useful when the answer could change follow-up, activity advice, or investigation of another cause.

Not everyone with a sore throat or tiredness needs EBV testing because many other conditions cause similar symptoms.

Testing people without symptoms is not usually useful unless there is a specific clinical reason, such as planning around transplantation or immune-suppressing treatment. A positive result is common because antibodies from an old infection can remain for life.

How to prepare

You do not need to fast. You can usually eat, drink water, and take your regular medicines as normal.

Tell the healthcare professional arranging the test if you have recently received:

Do not stop a prescribed medicine or supplement unless you have been told to do so. Biotin affects some laboratory methods but not others, so follow any test-specific instructions.

Wear clothing with sleeves that roll up easily.

- A blood or plasma transfusion
- Immunoglobulin treatment, including intravenous immunoglobulin
- Medicines that weaken the immune system
- High-dose biotin supplements

What happens during the test

A healthcare professional places a band around your upper arm and cleans the skin. A small needle is inserted into a vein, usually inside your elbow, and blood is collected into a tube.

You may feel a brief scratch or sting. The blood draw usually takes about five minutes, and no recovery time is normally needed. The sample is sent to a laboratory.

Understanding your results

Results are usually reported as positive, negative, or equivocal, meaning unclear or close to the laboratory's decision point. Some laboratories also report a number, but a higher number does not reliably mean a more severe or recent infection.

Common patterns include:

VCA IgG and EBNA IgG commonly remain positive for life. Their presence does not mean EBV is currently causing your symptoms.

EA IgG is harder to interpret. It may occur during recent infection but can remain positive long after recovery, so it should not be used alone to label an infection as active.

Laboratory methods and thresholds differ. Interpretation also depends on factors such as age, pregnancy, medicines, immune function, and the clinical situation. Results should be read using the laboratory's reference information.

- VCA IgM positive and EBNA IgG negative: may support a recent primary infection
- VCA IgG positive and EBNA IgG positive: usually indicates infection in the past
- All antibodies negative: no antibodies were detected, although testing may have been too early
- An unclear or unusual combination: may require repeat testing or another test

What affects the results

Testing too early is the main source of misleading results. Antibodies take time to develop, so a sample collected near the start of symptoms can be negative even when EBV is responsible.

A recent blood or plasma transfusion or immunoglobulin treatment may introduce donor antibodies, making it harder to tell whether a positive result came from your immune response.

A weakened immune system may produce a delayed, weak, or incomplete antibody pattern. This can happen because of certain illnesses, transplantation, chemotherapy, or immune-suppressing medicines. An EBV DNA test may be more informative in this setting.

Other infections or laboratory interference can occasionally cause a false-positive result, especially for VCA IgM.

Pregnancy, age, and medicines affect how results are interpreted but do not usually change antibodies predictably. Exercise, coffee, and time of day are not known to meaningfully alter EBV antibody patterns.

Accuracy and limitations

No EBV antibody test is correct in every situation. It can miss a recent infection if your body has not yet made enough antibodies. Repeating the panel later may show a clearer pattern.

False-positive results can also occur. VCA IgM is particularly vulnerable to cross-reactions from other infections or non-specific immune activity, so an isolated positive result may need confirmation.

Some people never develop a typical antibody pattern, and EBNA results can differ between laboratory methods.

Antibody testing is usually better than a Monospot test for establishing whether EBV infection is recent or past. However, it cannot prove that EBV is causing tiredness months later or reliably show whether you are currently contagious.

EBV DNA testing, or PCR, looks for the virus's genetic material. It may be more useful for people with weakened immune systems or for monitoring transplant-related complications. It is not usually the first test for uncomplicated mononucleosis because low levels of EBV DNA can occur without a new illness.

Risks and complications

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

complications are uncommon. Pressure over the needle site usually stops minor bleeding.

What happens next

If the results support a recent EBV infection, follow-up usually focuses on symptoms and recovery rather than repeated antibody tests. Antibody levels do not generally show when you have fully recovered.

If the result is negative but the sample was collected early, repeat testing may be considered. If the pattern shows an old infection, another cause may need to be investigated.

Arrange routine follow-up if symptoms are not improving, keep returning, or interfere with eating, drinking, work, school, or usual activities.

Seek urgent medical help for difficulty breathing, inability to swallow saliva, signs of severe dehydration, or worsening weakness. Sudden severe pain in the upper-left abdomen, collapse, confusion, or fainting requires emergency assessment.

Common questions

Can I drink coffee before the test?

Yes. Coffee does not usually affect EBV antibody results. If other blood tests are being collected, follow any fasting instructions for those tests.

Do I need to fast?

No. Food and drinks do not meaningfully change EBV antibody levels.

Does the time of day matter?

No. Testing can usually be done whenever the collection site is open.

Can I exercise before the blood draw?

Yes. Exercise is not known to alter the antibody pattern. However, strenuous exercise may be uncomfortable or discouraged if you feel unwell.

How long do EBV antibodies stay positive?

VCA IgG and EBNA IgG usually remain detectable for life. VCA IgM generally fades after a recent infection, although timing varies.

Will this test tell me whether I am contagious?

No. Antibody results do not reliably show whether you can pass EBV to someone else. The virus may be present in saliva at different times, including after symptoms improve.

Sources

- Centers for Disease Control and Prevention. Laboratory Testing for Epstein-Barr Virus
- ARUP Consult. Epstein-Barr Virus: Choose the Right Test
- Public Health Ontario. Epstein-Barr Virus Serology
- De Paschale M, Clerici P. Serological diagnosis of Epstein-Barr virus infection: Problems and solutions. World Journal of Virology. 2012;1(1):31-43