



Understanding Hepatitis B Blood Tests



Understanding your hepatitis B blood test results can be confusing. It is important to discuss your test results with your health care provider so that you can clearly understand whether you have a new infection, chronic infection, or have recovered from an infection. You may want to take this sheet with you to your appointment as a reference guide. In addition, it is helpful if you request a written copy of your blood tests so that you can be sure you know which tests are positive or negative.

Before explaining the tests, there are two basic medical terms that you should be familiar with:

Antigen: A foreign substance in the body, such as the hepatitis B virus.

Antibody: A protein that your immune system makes in response to a foreign substance. Antibodies can be produced in response to a vaccine or to a natural infection. Antibodies usually protect you against future infections.

The test that is used to help you understand your hepatitis B status is called the **hepatitis B blood panel**. This is a simple 3-part blood test that your doctor can order. Your results can be returned within 7-10 days.

The 3-part hepatitis B blood panel includes the following:

1. Hepatitis B Surface Antigen (HBsAg): The “surface antigen” is part of the hepatitis B virus that is found in the blood of someone who is infected. If this test is positive, then the hepatitis B virus is present.

2. Hepatitis B Surface Antibody (HBsAb or anti-HBs): The “surface antibody” is formed in response to the hepatitis B virus. Your body can make this antibody if you have been vaccinated, or if you have recovered from a hepatitis B infection. If this test is positive, then your immune system has successfully developed a protective antibody against the hepatitis B virus. This will provide long-term protection against future hepatitis B infection. Someone who is surface antibody positive is not infected, and cannot pass the virus on to others.

3. Hepatitis B Core Antibody (HBcAb or anti-HBc): This antibody *does not* provide any protection or immunity against the hepatitis B virus. A positive test indicates that a person may have been exposed to the hepatitis B virus. This test is often used by blood banks to screen blood donations. However, all three test results are needed to make a diagnosis.

Use the following chart to help you and your doctor interpret your blood panel results:

Tests	Results	Interpretation	Recommendation
HBsAg HBsAb HBcAb	Negative (-) Negative (-) Negative (-)	NOT IMMUNE– has not been infected but is still at risk for possible future infection – needs vaccine	Get the vaccine
HBsAg HBsAb HBcAb	Negative (-) Positive (+) Negative or positive (-/+)	IMMUNE – has been vaccinated or recovered from previous infection – cannot infect others	Vaccine is not needed
HBsAg HBsAb HBcAb	Positive (+) Negative (-) Negative or Positive (-/+)	ACUTE infection or CHRONIC infection – hepatitis B virus is present – can spread the virus to others	Find a knowledgeable doctor for further evaluation
HBsAg HBsAb HBcAb	Negative (-) Negative (-) Positive (+)	UNCLEAR – several interpretations are possible – all 3 tests should be repeated	Find a knowledgeable doctor for further evaluation

What is hepatitis B? Hepatitis B is the world's most common serious liver infection. It is caused by the hepatitis B virus (HBV) that attacks liver cells and can lead to liver failure, cirrhosis (scarring) or cancer of the liver later in life. Approximately 90% of healthy adults who are exposed to the hepatitis B virus (HBV) recover on their own and develop the protective surface antibody. However, 10% of infected adults, 50% of infected children and 90% of infected babies are unable to get rid of the virus and develop chronic infection. These people need further evaluation by a liver specialist or doctor knowledgeable about hepatitis B.



Who should be tested? HBV is transmitted through contact with blood or infected bodily fluids, through unprotected sex, unsterile needles, and from an infected mother to her newborn during the delivery process. HBV is not transmitted casually, through the air, or from casual social contact (hugging, coughing, sneezing).

The following groups are especially at high-risk for infection and should be tested:

- Health care workers and emergency personnel
- Partners or individuals living in close household contact with someone who is infected
- Individuals who have had multiple sex partners or who have been diagnosed with an STD
- Injection drug users
- Men who have sex with men
- Individuals who received a blood transfusion prior to 1972
- Individuals who have tattoos or body piercings
- Individuals who travel to countries where hepatitis B is common (Asia, Africa, South America, the Pacific Islands, Eastern Europe, and the Middle East)
- Individuals emigrating from countries where hepatitis B is common, or who are born to parents who emigrated from these countries (see above)
- **ALL** pregnant women should be tested for hepatitis B infection

Is there a vaccine for hepatitis B? The good news is that there is a safe and effective vaccine for hepatitis B that lasts a lifetime. It is recommended in the U.S. and other countries for all infants and children up to age 18 and adults at high risk for infection.



Additional Diagnostic Tests:

Liver Function Tests (LFTs): These are a group of blood tests that help your doctor find out how well your liver is working. The most important test is the following:

Alanine Aminotransferase (ALT): This is an enzyme that is released from liver cells into the bloodstream when the liver is injured. An ALT level above normal may indicate liver damage. ALT levels are included in the regular monitoring of all chronic hepatitis B patients; this test can also be useful in deciding whether a patient would benefit from therapy, or for evaluating how well a current treatment is working.

Liver Biopsy: This involves the removal of a small piece of tissue from the liver using a special needle. The tissue is examined under a microscope to look for inflammation or liver damage.

Hepatitis B DNA test: This is a highly sophisticated blood test that checks for the presence of hepatitis B virus DNA in the bloodstream. The DNA test indicates how much virus is present in the blood.

e-antigen: This is a protein that is made by the virus. If this test is positive, it indicates that there is a lot of virus in the blood, which means that you can more easily spread the virus to others.

e-antibody: Often as the virus stops replicating in the body, and the e-antigen disappears from the blood, the e-antibody appears. This can happen spontaneously or after treatment.

For more information about HBV diagnostic tests, please visit the following websites:

Hepatitis B Foundation website at www.hepb.org

HIV & Hepatitis Treatment Advocates at www.hivandhepatitis.com/tests.html

University of Maryland Medical Center at www.umm.edu/liver

