

Hepatitis B Virus

Nomenclature and Interpretation of Laboratory Tests

- HBV** **Hepatitis B virus**. Etiologic agent of “serum” hepatitis.
- HBsAg** **Hepatitis B surface antigen**. Surface antigen(s) of HBV detectable in serum.
- HbeAg** **Hepatitis B e antigen**. A marker of the core of the virus. Correlates with HBV replication: implies high titer HBV in serum and infectivity of serum.
- HbcAg** **Hepatitis B core antigen**. No commercial test available because it is not freely found in serum.
- anti-HBs** **Antibody to HBsAg**. Indicates past infection with and immunity to HBV, or passive antibody from HBIG, or immune response from HBV vaccine.
- anti-Hbe** **Antibody to HBeAg**. Presence in serum of HBsAg carrier indicates lower titer of HBV.
- anti-HBc** **Antibody to HBcAg**. May indicate past infection with HBV at some undefined time or an ongoing infection.
- IgM anti-HBc** **IgM class antibody to HBcAg**. Indicates recent infection with HBV; detectable for 4-6 months after infection.
- IgG anti-HBc** **IgG class antibody to HBcAg**. Indicates non-recent infection with HBV; present more than 4-6 months after acute infection. Its isolated presence does not imply immunity and may be consistent with ongoing infection.
- HBV DNA** **Hepatitis B virus DNA**. Indicates how rapidly the virus is replicating in the liver.
- HBIG** **Hepatitis B immune globulin**. Contains high-titer antibodies to HBV.

Interpretation of the Hepatitis B Profile Results

Profile Results	Interpretation	Recommendation*
HbsAg negative anti-HBc negative anti-HBs negative	Susceptible	Vaccinate
HbsAg negative anti-HBc positive or negative anti-HBs positive	Immune	Vaccination not indicated
HbsAg positive anti-HBc positive or negative anti-HBs negative	Acutely infected or chronic carrier	Vaccination not indicated
HbsAg positive anti-HBc positive or negative anti-Hbs negative HbeAg positive or negative	Acutely infected or chronic carrier (presence of HBeAg correlates with higher infectiousness)	Vaccination not indicated
HbsAg negative anti-Hbc positive anti-HBs negative	Multiple interpretations possible: See below.**	Vaccinate (unless patient is recovering from acute infection)

*Vaccinate according to current ACIP recommendations

**If a person is only positive for anti-HBc while negative for HBsAg and anti-HBs, there are 4 possible explanations:

1. May be recovering from acute HBV infection (vaccination not indicated).
2. May be distantly immune and test not sensitive enough to detect very low level of anti-HBs in serum.
3. May be undetectable level of HBsAg present in the serum and the person is actually a carrier (acute or chronic).
4. May be susceptible with a false positive anti-HBc.