

NEWSFLASH ! ! !

Hepatitis B Serologic Markers

What is Hep B - A DNA virus of the hepadnavirus group. These viruses replicate by forming an RNA intermediate which is copied using the enzyme reverse transcriptase to regenerate DNA strands.

What Markers are Available -

- **HBsAg**-1st detectable agent in acute hepatitis, present in incubation period
- **HBeAg** - Highly infectious state and chronic infection
- **HBsAb** - resolved Hep B infection with Immunity/prior vaccination
- **HBcAb (IgG and IgM)** - Window period between HBsAg clearance and HBsAb appearance. IgM present in acute infection
- **HBeAb** - Low infectivity, predicts resolution

Serologic diagnosis of hepatitis B virus infections

	Tests to Order	Expected Results	Comments
Acute Hepatitis	HBsAg HBcAb (IgM) HBcAbTotal	Detectable Detectable Detectable	Patient requires DNA quantification and treatment.
Perinatal Infection	HBsAg HBeAg	Detectable Detectable	If HBsAg positive pregnant woman is HBeAg positive, her infant will have a 90% chance of acquiring chronic hepatitis B infection
Immunity	HBsAg HBsAb HBcAb	Not detectable Detectable (Adequate Immunity) Detectable (Infected individuals)	Test panel to be used for dialysis patients, healthcare workers, recipients of frequent blood transfusions. To be used in sexual partners of infected individuals
Chronic Hepatitis	HBsAg HBeAg HBeAb HBcAbTotal	Not detectable Not detectable Detectable Detectable	Result is typical of late sero-conversion or disease resolution. HbeAg remains positive in unresolved cases
Infant Follow Up	HBsAg HBsAb	Not detectable Detectable	To monitor success of treatment of perinatal infection. To be checked 12-15 months after birth
Post Vaccination	HBsAb	Detectable	Adequate Immunity. No further immunization needed
Screening for pre-employment	HBsAg HBsAb		Patients with a positive HBsAg should be followed up by checking HBcAb. If HBsAb is positive, no immunization is necessary

Are there unusual or discordant serologic profiles? Yes, here are some examples

- HBsAg positive and HbcAb negative
- HBsAg, HBsAb and HBcAb positive
- HBsAg negative and HBeAg positive
- Total HBcAb negative and HBcAb(IgM) Positive

What do I do with discordant results - Repeat with additional serologic markers. A different method of assay may be employed. If it persists, consult a pathologist and have patient re-evaluated by a hepatologist/gastroenterologist.

When do I check the post vaccination status of my patient?

Post-vaccination testing, should be performed 1-2 months after the last dose of vaccine. Infants born to HBsAg-positive mothers should be tested 3-9 months after the last dose.