When should we check Hepatitis B titers?

Hepatitis B vaccine contains Hepatitis B surface antigen particles. When checking for immune response to the vaccine, the Hepatitis B Surface Antibody should be tested. A positive Hepatitis B surface antibody can result from infection with the Hepatitis B virus or from receiving the Hepatitis B vaccine.

Vaccine induced antibody levels decrease over time; in fact up to 60% of vaccinated persons lose detectable levels of antibody 9-15 years post vaccination. Immune memory lasts over 20 years and vaccinated persons with decreasing antibody levels are still protected. Exposure to the Hepatitis B virus results in an antibody response that prevents infection. Booster doses of vaccine are not recommended for persons with normal immune status.

Post vaccine testing can detect if the person had had an immune response to the vaccine, and should be done 1-2months after completing the vaccine series. Post-vaccine testing is not routinely recommended except for persons whose medical management requires knowledge of their immune status. Healthcare workers with ongoing patient contact and risks for blood and body fluid exposures should be tested for immune response to the Hepatitis B Vaccine. Testing for the Hepatitis B surface Antibody should be done 1-2 months after completion of the vaccination series. Persons who do not have immune response after the vaccine series should have the vaccine series completed again. They should be tested for immune response 1-2 months after completing the second vaccine series. One reason for failure of immune response after receiving 6 doses of vaccine is chronic Hepatitis B infection. Persons who have not responded to two series of the Hepatitis B vaccine should have a Hepatitis B surface antigen test to detect infection. If a person who is free of chronic Hepatitis B infection has not responded to two series of the vaccine, they should be considered non-protected.

Because of decreasing antibody levels following vaccination, it is difficult to interpret a negative antibody test in persons who were vaccinated in the past. Without the testing 1-2 months post vaccination it is not possible to determine if a negative antibody test represents vaccine failure or antibody levels below the level of detection.

If an employee who received the vaccine in the past is tested and has a negative Hepatitis B surface antibody, there are two management options.

The first option is to consider the employee a non-responder and give them the Hepatitis B vaccination series.

The other option is to give one dose of the Hepatitis B vaccine and then the antibody level tested in 4-6 weeks. If at that time, the antibody is detected, it is most likely a booster response in a
previous responder and they do not need further doses of vaccine. If the antibody is negative, give the two additional doses of vaccine and then re-test. If at that time the antibody test is negative, consider the person to be a non-responder and not protected from Hepatitis B.

For more information about Hepatitis B, the vaccine, and serologic testing refer to the Hepatitis B chapter in the CDC “Pink Book” *Epidemiology and Prevention of Vaccine Preventable Diseases*

http://www.cdc.gov/vaccines/pubs/pinkbook/pink-chapters.htm “Pink Book”

http://www.cdc.gov/vaccines/pubs/pinkbook/downloads/hepb.pdf Hepatitis B Chapter