

# Management of Infants Born to Women with Hepatitis B Virus Infection for Pediatricians

## Management of Perinatally Hepatitis B Virus (HBV)-Exposed Infants with Birth Weights $\geq 2,000$ grams ( $\geq 4.4$ lbs)

Administer hepatitis B immune globulin (HBIG) and single-antigen vaccine in separate limbs at birth ( $\leq 12$  hours).

Complete vaccine series with 2 additional doses of single-antigen vaccine (3 total doses) OR with 3 additional doses of combination vaccine (4 total doses).

|  | $\leq 12$ hours of birth                               | 1 mo                 | 2 mos                | 4 mos                | 6 mos                |
|--|--|----------------------|----------------------|----------------------|----------------------|
| Single-Antigen Vaccine Series*                 | 1 <sup>st</sup> dose                                   | 2 <sup>nd</sup> dose |                      |                      | 3 <sup>rd</sup> dose |
| Single-Antigen and Combination Vaccine Series* | 1 <sup>st</sup> dose ( <i>single-antigen vaccine</i> ) |                      | 2 <sup>nd</sup> dose | 3 <sup>rd</sup> dose | 4 <sup>th</sup> dose |

\*Administer the final dose no earlier than 6 months of age (minimum age 164 days includes 4-day grace period). Complete postvaccination serologic testing (PVST) at 9–12 months of age (or 1–2 months after final dose, if series delayed) by testing for ONLY hepatitis B surface antigen (HBsAg) and antibodies to hepatitis B surface antigen (anti-HBs). Do NOT test for antibodies to hepatitis B core antigen (anti-HBc).

## Management of Perinatally Hepatitis B Virus (HBV)-Exposed Infants with Birth Weights $< 2,000$ grams ( $< 4.4$ lbs)

Administer HBIG and single antigen vaccine in separate limbs at birth ( $\leq 12$  hours).

Complete vaccine series with 3 additional doses of single antigen or combination vaccine (4 total doses).

|  | $\leq 12$ hours of birth                               | 1 mo                 | 2 mos                | 3 mos | 4 mos                | 6 mos                |
|--|--|----------------------|----------------------|-------|----------------------|----------------------|
| Single-Antigen Vaccine Series*                 | 1 <sup>st</sup> dose                                   | 2 <sup>nd</sup> dose | 3 <sup>rd</sup> dose |       |                      | 4 <sup>th</sup> dose |
| Single-Antigen and Combination Vaccine Series* | 1 <sup>st</sup> dose ( <i>single-antigen vaccine</i> ) |                      | 2 <sup>nd</sup> dose |       | 3 <sup>rd</sup> dose | 4 <sup>th</sup> dose |

\*Administer the final dose no earlier than 6 months of age (minimum age 164 days includes 4-day grace period). Complete postvaccination serologic testing (PVST) at 9–12 months of age (or 1–2 months after final dose, if series delayed) by testing for ONLY hepatitis B surface antigen (HBsAg) and antibodies to hepatitis B surface antigen (anti-HBs). Do NOT test for antibodies to hepatitis B core antigen (anti-HBc).

## Interpreting Post Vaccination Serologic Test (PVST) Results

| Immune  | Still Susceptible   | Infected   |
|---|---|--|
| HBsAg-Negative<br>Anti-HBs-Positive<br>Antibody Level $\geq 10$ mIU/mL<br><b>No further follow up necessary</b><br>Report results to your Perinatal Hepatitis B Prevention Program Provider (PHBPP) coordinator.<br><a href="https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html">https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html</a> | HBsAg-Negative<br>Anti-HBs-Negative<br>Antibody Level $< 10$ mIU/mL<br><b>Needs additional follow up and vaccines</b><br>Contact your PHBPP coordinator for assistance<br><a href="https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html">https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html</a> | HBsAg-Positive<br>Anti-HBs-Negative<br>Antibody Level $< 10$ mIU/mL<br><b>Needs additional follow up</b><br>Contact your PHBPP coordinator for assistance<br><a href="https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html">https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html</a> |



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

# Hepatitis B Virus FAQs

## What is hepatitis B virus (HBV)?

Hepatitis B is an infectious liver disease. The infection can be acute or chronic. Chronic infections can lead to cirrhosis, liver cancer, and premature death. Though usually asymptomatic, most infants (90%) who are infected with HBV will develop chronic infection and 25% will die prematurely from liver cancer or cirrhosis. HBV is transmitted through contact with infectious blood or body fluids or from a person who is infected (HBsAg+) to their newborn during delivery.

## Can perinatal transmission be prevented?

Yes, perinatal transmission can be prevented by screening for HBsAg during every pregnancy. Infants born to HBsAg+ women should receive HBIG and a dose of single-antigen hepatitis B vaccine  $\leq 12$  hours of birth, followed by a complete series of hepatitis B vaccine, which is up to 94% effective in preventing perinatal transmission.

## What if my practice identifies an Perinatally HBV-exposed newborn that did not receive HBIG before hospital discharge?

The infant should receive an urgent referral to receive HBIG, which can be administered up to 7 days after birth. If more than 7 days have passed, HBIG is unlikely to be effective in preventing transmission. However, it is still important for the infant to complete the hepatitis B vaccine series, and providers should adhere to the minimum intervals between doses.

## What is postvaccination serologic testing (PVST) and why is it necessary?

Postvaccination serologic testing (PVST) is recommended for infants and children born to women with hepatitis B infection. Serologic testing confirms whether the child has developed immunity or has been infected with HBV. PVST should include hepatitis B surface antigen (HBsAg) and hepatitis B surface antibody (anti-HBs) only. PVST should occur between 9–12 months of age or 1–2 months after vaccine series completion, if the series is delayed. Note: Tests for antibodies to hepatitis B core antigen (anti-HBc) should *not* be ordered.

## Why aren't antibodies to hepatitis B core antigen (anti-HBc) included in PVST?

A positive anti-HBc test result indicates a past or current hepatitis B infection. In infants, a positive anti-HBc test may result from measuring passively acquired maternal antibodies that are detectable in HBV-exposed infants up to 24 months of age.

## Why must providers wait until the infant is 9 months of age to perform PVST?

Testing performed before 9 months of age can provide inaccurate anti-HBs results by detecting passive antibodies from HBIG administered at birth rather than actual response to the hepatitis B vaccine. Also, for infants who receive HBIG at birth, there can be a prolonged HBV incubation period. Waiting until 9 months of age can maximize detection of late HBV infection if present.

## If vaccine series completion is delayed and I am concerned that the infant will NOT return for PVST, can I perform testing immediately after completing the vaccine series?

No, transient HBsAg positivity has been reported for up to 18 days after vaccination. To assure accurate PVST results, the test must be conducted at 9–12 months of age or 1–2 months after vaccine series completion if the series is delayed.

## Can PVST be delayed until the infant is older?

No, anti-HBs concentrations decline rapidly within the first year after the series is completed. Delaying PVST beyond the recommended time frame may yield a negative/non-reactive anti-HBs result, making it difficult to determine if immunity has waned or vaccine has failed. This ambiguity may lead to unnecessary revaccination. For this reason, providers are encouraged to test at 9–12 months of age or 1–2 months after vaccine series completion if the series is delayed.

## Is assistance available for management of HBV-exposed infants?

Yes, CDC provides funding and technical assistance for perinatal hepatitis B prevention programs (PHBPPs) in all 50 states and 14 other jurisdictions. All Perinatally HBV-exposed infants should be managed by the PHBPP. To find contact information for the perinatal hepatitis B prevention program coordinator in your area, please go to: <https://www.cdc.gov/vaccines/vpd/hepb/hcp/perinatal-contacts.html>

### PHBPP Coordinator contact information:

CDC Tip Sheet is adapted with permission from the Georgia Department of Public Health publication, "A Pediatric Guide: Caring for Infants Born to Hepatitis B-Infected Mothers."

\*Reference: *MMWR*, January 12, 2018, Vol 67,(1);1–31, Prevention of Hepatitis B Virus Infection in the United States: Recommendations of the Advisory Committee on Immunization Practices. <https://www.cdc.gov/mmwr/volumes/67/rr/rr6701a1.htm>