

Hepatitis B Vaccines

Table 1: Recommended doses of Hepatitis B (HB) vaccine by age group and vaccine type

Infants of Hepatitis B Surface Antigen (HBsAg) Positive (+) Mothers*	Infants, Children, & Adolescents 0-19 yrs**	2 – Dose Regimen Adolescents 11 – 15 yrs†	Adults ≥ 20 yrs**	Dialysis/ Immunocompromised Adults ≥20 yrs‡
Recombivax HB (Merck)				
5 mcg 0.5mL IM 3 doses @ 0, 1-2, and 6-18 mo	5 mcg 0.5mL IM 3 doses @ 0, 1-2, and 6-18 mo	10 mcg† 1.0mL IM 2 doses @ 0, 4-6 mo	10 mcg 1.0 mL IM 3 doses @ 0, 1, and 6 mo	40 mcg 1.0 mL IM 3 doses @ 0, 1, and 6 mo
Engerix – B (GlaxoSmithKline)				
10 mcg [§] 0.5mL IM 3 doses @ 0, 1-2, and 6-18 mo	10 mcg 0.5mL IM 3 doses @ 0, 1-2, and 6-18 mo	N/A	20 mcg 1.0mL IM 3 doses @ 0, 1, and 4-6 mo	40 mcg [¶] 2.0mL IM 4 doses @ 0, 1, 2, and 6 mo

Indications:

- HB vaccine is recommended to induce active immunity against hepatitis B virus (HBV) among patients of all ages who are currently or will be at increased risk of infection.

Hepatitis B (HB) Vaccine Recommendations for Infants of HBsAg (+) Mothers*

- **Infants of HBsAg-positive mother or unknown HBsAg status:** First dose within 12 hours of birth along with HBIG.
- **Preterm infants (< 2,000 grams at birth) born to HBsAg-positive mother:** 4 doses: Give first dose within 12 hours of birth along with Hepatitis B Immune Globulin (HBIG). Do not count the birth dose in the 3-dose schedule. Administer next dose in the series when the infant reaches a chronologic age of 1 month, the third dose 1-2 months after the second, and the fourth dose at 6 mos. of age.
- **Infants whose mother's HBsAg status is unknown at birth:** Same as for infant of HBsAg+ mother except do not give HBIG unless mother is confirmed to be HBsAg+. If mother is HBsAg+ administer HBIG as soon as possible to infant, but no later than 7 days after birth.
- **Preterm infants (< 2,000 grams at birth) whose mother's HBsAg status is unknown:** 4 doses: Administer hepatitis B vaccine within 12 hours of birth. If the maternal HBsAg status cannot be determined within 12 hours of birth administer HBIG. The birth vaccine dose is not counted as part of the series, and the infant should receive three additional doses beginning at age 1 month.

Routine HB Vaccine Recommendations**

- **Routine Infant Immunization:** For medically stable infants weighing ≥2000 grams at birth born to *HBsAg-negative* mothers, administer the first vaccine dose before hospital discharge. Continue with the schedule as recommended.
- **Preterm infants (<2000 grams at birth) whose mothers are HBsAg-negative:** Administer 3 doses of HB vaccine. The first dose of HB vaccine should be administered at chronologic age 1 month or at hospital discharge. Continue with the vaccination schedule as recommended.
- **Child, Adolescent and Adult:** See Table 1.

Other HB Vaccine Recommendations

Alternate Schedule for Engerix-B[§]

- 4 doses: 0 (initial), 1 month, 2 months, and 12 months after initial dose. Designed for certain populations, e.g., infants born to HBsAg+ mothers.

RECOMBIVAX HB[†]

- Adolescent schedule must be completed before the 16th birthday otherwise, complete a 3 dose schedule.

Dialysis/Immunocompromised patients <20 years[‡]

- Use standard vaccine dose and schedule given for infants, children, and adolescents. Higher doses might be more immunogenic, but no specific recommendations have been made.

Engerix-B Adult Formulation for dialysis patients[¶]

- Use two 1.0 mL doses (20 mcg/dose) administered at one site on each visit.

Adult with diabetes aged 19-59 years^{**}

- Administer the age-appropriate dose of HB vaccine for patients diagnosed with diabetes who have not been previously vaccinated.
- Adults 60 years and older with diabetes may be vaccinated at the discretion of the treating physician.

Combination Vaccines

- Pediarix (DTaP + IPV + HB), Comvax (HB + Hib), and Twinrix (HB + HA) vaccines may be used when either antigen is indicated.
- Combination vaccines cannot be used for the birth dose.
- For more information on recommendations for use of HB combination vaccines go to the Immunization Program website at <http://publichealth.lacounty.gov/ip/providers/B71.htm>

Post-vaccination Serology (PVS) Testing

- Routine PVS testing after vaccination is not recommended.
- PVS testing is recommended for all infants born to HBsAg+ mothers 3-12 months after the last dose of HB vaccine. PVS testing should include:
 - HBsAg
 - Antibody to HBsAg (anti-HBs)
- HCP who have contact with blood and are at increased risk for needlesticks or sharp instruments should be tested 1-2 months after completion of the 3-dose series.
- PSV testing is also recommended for the following persons:
 - Chronic hemodialysis patients
 - Other immunocompromised persons
 - Persons with HIV
 - Sex partners of HBsAg+
- **Persons who do not develop protective levels of anti-HBs antibodies after a 3 – dose series should receive an additional 3 doses of HB vaccine.**

Populations at Increased Risk Hepatitis B Virus (HBV)

- Immigrants, refugees, & orphans/adoptees from HBV-endemic area
- Injection-drug users
- Men who have sex with men (MSM)
- Inmates of long-term correctional facilities
- Persons undergoing hemodialysis
- Adults with diabetes
- Health care personnel (HCP)
- International Travelers (traveling to areas with high rates of hepatitis B)
- Clotting factor recipients
- Clients and staff in institutions for the developmentally disabled
- Alaska Natives & Pacific Islanders

Route & Site

- Administer IM into the deltoid muscle for young children (≥3 years), adolescents and adults. The anterolateral thigh should be used for younger children and infants.
- HB vaccine should be administered simultaneously with other age appropriate vaccines.

Contraindications

- Severe allergic reaction to a vaccine component or following a prior dose.

Precautions

- Moderate or severe acute illness until improved.

Adverse Reactions

- **Injection site:** pain
- **Systemic:** fatigue, headache, irritability, and fever

Storage and Handling

- Store vaccine in the refrigerator between 35 – 46° F (2 – 8°C).
- Exposure to freezing temperatures (≤32°F) destroys the potency of the vaccine.

