

# Vaccine Specifics: Administering Hepatitis B Vaccine

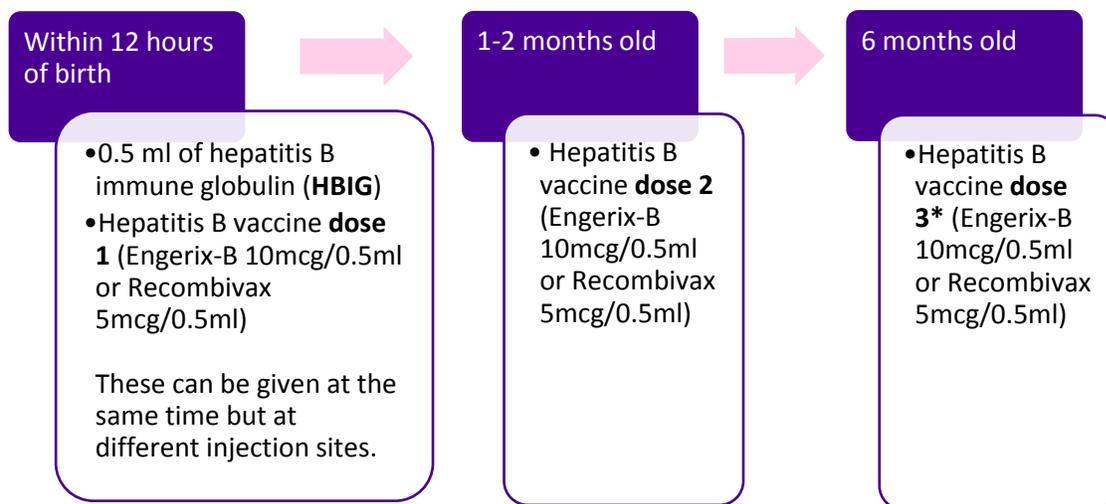
## Route and Site

Give hepatitis B vaccine intramuscularly into the deltoid muscle of adults and children and into the anterolateral thigh muscle of newborns and babies. **Do not** give hepatitis B vaccine intradermally or into the buttock.

You can give hepatitis B vaccine at the same time as other vaccines, but use separate injection sites.

## Dose and Schedule

Babies born to HBsAg-positive mothers should get the following. You can use different brands of the single-antigen vaccine for the vaccine doses.



## Vaccination of Premature Babies

- Premature babies born to HBsAg-positive mothers or mothers with unknown status must get HBIG AND hepatitis B vaccine less than 12 hours after birth. If these babies weigh less than 2,000 grams at birth, do not count the first dose of hepatitis B vaccine as one of the doses in the series. The baby should get three additional doses of hepatitis B vaccine, starting when medically stable and at least 1 month of age. ([MMWR, 2005](#)). This will be a total of 4 doses.
- Premature babies born to HBsAg-negative mothers, regardless of birth weight, should get vaccinated at the same chronological age and with the same schedule and precautions as full-term babies. Use the full recommended dose of each vaccine, because divided or reduced doses cannot count as valid. Studies demonstrate that decreased seroconversion rates might occur among certain premature babies with low birth weight (less than 2,000 grams) after getting hepatitis B vaccine at birth. However, by chronological age 1 month, all premature babies regardless of initial birth weight or gestational age [can respond as adequately as older and larger babies](#).

## Vaccine Specifics: Recommended Doses of Currently Licensed Monovalent Hepatitis B Vaccines

Recombivax and Engerix-B vaccines both have three doses in their series. Engerix-B also is licensed for a four-dose series given at 0, 1-2, and 6 months. Dialysis patients should get Engerix-B at 0, 1, 2, and 6 months.

**Key:**  
 HBsAg = Hepatitis B surface antigen  
 mcg = microgram  
 mL = milliliter  
 GSK: GlaxoSmithKline

Group	Merck Recombivax HB Dosage	GSK Engerix-B Dosage
Babies, <sup>7</sup> children & adolescents (0–19 years of age)	5 mcg (0.5 mL) <sup>8</sup> Pediatric/adolescent formulation. YELLOW cap and stripe on vial and cartons and orange banner on the vial labels and cartons stating “preservative free”	10 mcg (0.5 mL) <sup>9</sup> Pediatric formulation BLUE-top vial Single-dose vials and prefilled disposable TIP-LOK syringe
Adolescent (11–15 years of age) Merck (11–19 years of age) GSK  A two-dose series for adolescents (11-15) is also acceptable	10mcg (1.0 mL) Adult formulation GREEN cap and stripe vial and orange banner on vial label	10mcg (0.5 mL) OLIVE GREEN top vial
Adults (20 years & older)	10 mcg (1.0 mL) Adult Formulation GREEN-top vial	20 mcg (1.0 mL) Adult Formulation ORANGE-top vial
Predialysis and dialysis patients	40 mcg (1.0 mL) Dialysis formulation BLUE cap and stripe vial with orange banner	40 mcg (2.0 mL) (Two 20 mcg doses) Adult formulation ORANGE-top vial

### Sources:

- [MMWR, Centers for Disease Control, December 23, 2005/Vol. 54/No. RR-16](#)
- [Recombivax HB package insert](#), March 2014
- [Engerix B package insert](#), December 2015

<sup>7</sup> Infants born to HBsAg-positive mothers should also receive hepatitis B immune globulin (HBIG) 0.5 mL intramuscularly at a site different from that used for the hepatitis B vaccine.

<sup>8</sup> Change in dose, licensed in 1998. Infants born to HBsAg-negative mothers now receive the same dose as infants born to HBsAg-positive mothers. “If the suggested formulation is not available, the appropriate dosage can be achieved from another formulation provided that the total volume of vaccine administered does not exceed 1 mL.”

<sup>9</sup> Change in adolescent dose, licensed in 1995.

## Vaccine Specifics: Administering HBIG

### *Route and Site*

For newborns and babies: Give HBIG intramuscularly into the anterolateral thigh muscle.

### *Dose and Schedule*

Newborns and babies should get 0.5 ml of HBIG within 12 hours of birth. They should also get dose 1 of hepatitis B vaccine at the same time at a separate injection site.

For other exposed persons, the dose of HBIG is 0.06 mL per kilogram of body weight. To calculate the dose:

- Convert body weight to kilograms (kg)
- Multiply the number of kilograms by 0.06 mL

For example, if the person weighs 110 pounds, the number of kilograms =  $110 \text{ lbs} \div 2.2$  (number of pounds per kilogram) = 50.0 kg. The correct dose of HBIG then would be  $50.0 \text{ kg} \times 0.06$  (the amount per kg), giving a dose of 3.0 mL.

### *HBIG Dosage at a Glance*

Use the following table to identify dosage based on weight.

Body weight in pounds (lbs)	Body Weight in kilograms (kg)	Dose in milliliters (mL)
100	45.5	2.7
110	50.0	3.0
120	54.5	3.3
130	59.1	3.5
140	63.6	3.8
150	68.2	4.1
160	72.7	4.4
170	77.3	4.6
180	81.8	4.9
190	86.4	5.2
200	90.9	5.5
210	95.5	5.7
220	100.0	6.0
230	104.5	6.3
240	109.1	6.5
250	113.6	6.8

Dose = 0.06 mL per kg of body weight; 1 kg = 2.2 lbs

## Vaccine Specifics: Storing and Handling Hepatitis B Vaccine and HBIG

**Always read the package insert.** Read the table below for storage and handling supplemental information, but this does **not** take the place of the package insert.

Shipping Requirements:	Use insulated container. Must ship with refrigerant.
Condition on Arrival:	Should not have been frozen. Refrigerate on arrival.
Storage Requirements:	Refrigerate immediately upon arrival. Store at 2°-8°C (35°-46°F). <b>Do not freeze.</b>
Shelf Life/Expiration:	Hepatitis B Vaccine - up to 3 years. Check date on container or vial. HBIG - up to 12 months. Check date on container or vial.
Instructions for Reconstitution or Use:	Inspect visually for particulate matter or discoloration. Shake vial or fill syringe well before use.
Shelf Life after Reconstituting or Opening:	Check expiration date on vial, or manufacturer-filled syringe. Give the vaccine shortly after withdrawal. If pre-filled syringe, administer after the needle is attached to the syringe.
Special Instructions:	Rotate stock so that you use the material with the earliest expiration date first.

### *Best Practices for Storing and Handling All Vaccines*

- Have policies and procedures in place to rotate stock and check expiration date of vaccine weekly. Use vaccine with earliest expiration date so none become outdated.
- Do not use outdated vaccine.
- Never store vaccine in refrigerator door.
- When transporting vaccine, always use an insulated container with ice packs.
- [Vaccine storage and handling information from the Department of Health](#)
- [Vaccine storage and handling recommendations and guidelines from the CDC](#)